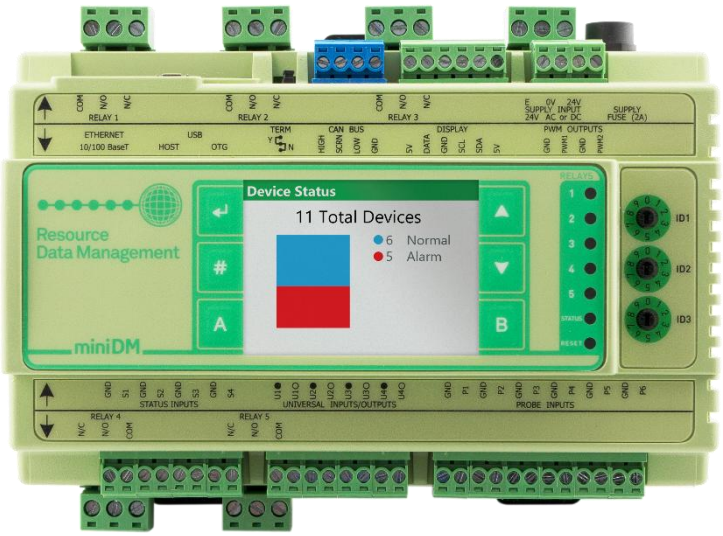
Resource
Data Management

DMTouch & miniDM

Commissioning & User Guide
Revision 4.3.7





PR05XX-XX
PR0680 CD NF MDM

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Commissioning and User Guide

DMTouch / miniDM V4.3.7

This guide describes details of how users interact with the DMTouch and miniDM using either the web interface or the panel's touch screen. Some screens and menus may differ when users view the DMTouch from different interfaces.

The Information within this Guide relates to users who are logged on to the device at 'install' level. Note that some of the screens and operations are not available when logged in at 'service' or 'site' levels.

Software versions V3.x.x and above are only compatible with DMTouch hardware versions V2 and above manufactured later than January 2015.

DMTouch

The DMTouch is the industry leading front end control system with monitoring and energy saving features as standard. Building upon the base functionality, both hardware and software options are available to expand the system to cater for any requirement. Some features are listed below;

- 10.1'' HD touch screen
- 12 analogue or digital inputs
- 4 relay outputs
- 100 configurable defrost channels.
- 92 configurable GPTimer channels and 8 Global GP Channels
- 16 TDB Programs can be run with a maximum of 4096 blocks
- Ability to communicate with third-party protocols, including Ethernet IP, BACnet, Modbus® and more
- Energy monitoring feature to monitor on the use of consumables and report on their usage.
- Multiple plug-in daughter boards to expand on the built in DMTouch Inputs and Outputs *
- CANbus port to allow expansion board connection to be used with TDB
- Auto export feature for periodic emails of data from connected devices
- Ability to email out alarms through emails and SMS
- Ability to create multi-page layouts
- Mimics to provide a graphical overview for a device
- Energy saving features for monitoring up to 50 Refrigeration Pack and Condensers
- Bluetooth support to communicate with RDM's Bluetooth enabled devices
- Secure user setup that can be configured for LDAP, Active Directory and RADIUS
- Web Services support
- Secure Sockets Layer (SSL) support
- MQTT Support
- Option of an Optic Fibre interface to enable high speed and long-distance connection with RDM's other fibre optic enabled products

* Hardware expansion options and software enablement's are listed in the Appendix 3: Related Part numbers

miniDM

The miniDM is an alternative hardware option to the DMTouch that is smaller in size but also has no touchscreen and can only be accessed via the use of a PC. In the following document, the information provided for the DMTouch is also applicable to the miniDM unless in reference to actions taken via the touchscreen or otherwise stated.

The main compatibility differences with the miniDM are as follows:

- It can only handle a Maximum of 32 devices logged on at any time, this is inclusive of all devices on the miniDM such as split controllers, merged controller, TDB programs, system controllers, hidden devices etc.
- It can have a Maximum of 15 network lines (e.g. BACnet IP, Modbus), but all the devices can only total 32
- It will only be able to run one TDB program with a maximum of 4096 blocks
- There is only 32 defrost channels available for programming instead of the standard 100
- Support 6 probes, 4 universals, 4 status, 2 pwm
- 5 relays up to three of which can be used as alarm relays
- Support for monitoring up to 5 Condensers / Packs via Energy Feature
- All Webservices are only available as a chargeable feature
- USB 4G Modem (PR0496-4G) not currently supported
- The Maintenance feature is not supported.
- Refrigeration Performance Indicator is not supported
- Document feature is not supported.

*** Support added for the TouchXL Orbit in software version 4.3.1 (PR0655-MD-OB)**

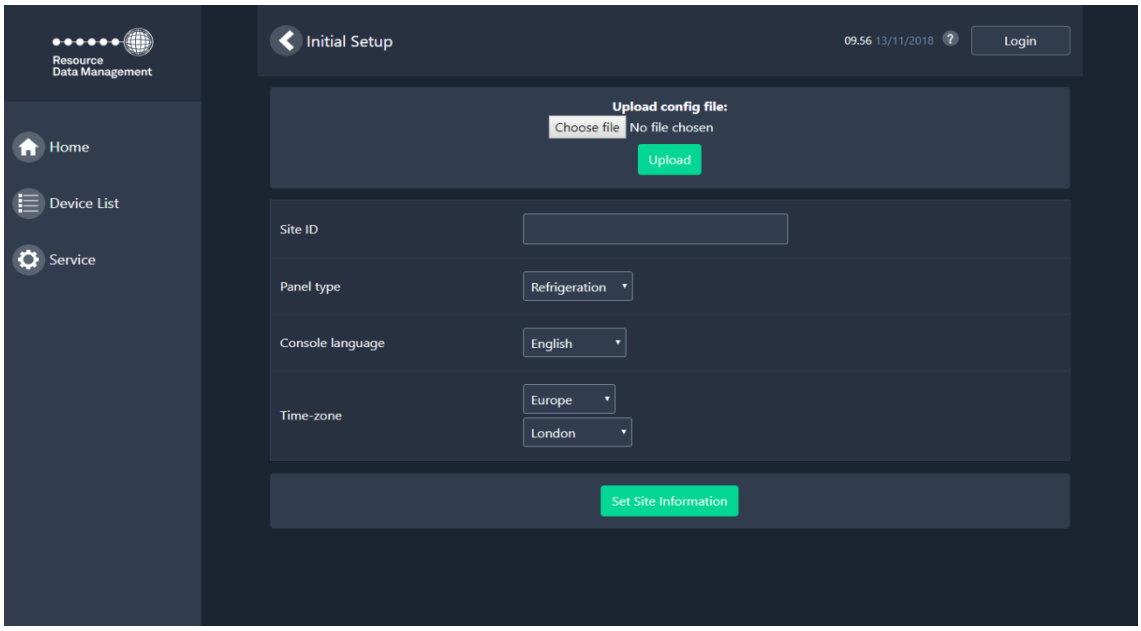
Navigation via PC - DMTouch

With the PC attached to the Device at eth0, start a web browser session and navigate to the IP address **http://10.1.2.75**. In addition to being the default IP address when shipped from the factory, the interface acts as a DHCP* server and issues IP addresses in its range. Note this can be changed by the end user, therefore the IP address may vary from site to site. Some example web browsers* are Edge or Google Chrome. For consistent results, use the DMTouch application navigation buttons rather than the standard browser buttons. If connection is lost to the DMTouch when viewing via a browser, the banner at the top of the screen will turn orange to notify the user.

*__Note1__: The default eth0 address (10.1.2.75) may be modified to use a different DHCP range on request. To determine the current eth0 IP address of a unit, please navigate via the built-in display of the DMTouch to the Network Card Setup page.
*__Note2__: Not compatible with Microsoft Internet Explorer (IE) browser.

Initial Setup

Upon first powering up the DMTouch, it will prompt users with an Initial Setup screen.



Prior to commissioning the details listed within the Initial Setup page must be entered. The user will not be permitted to navigate to any other screen until these details have been entered. These details can later be altered from within the Site Setup pages.

Site ID:	Enter the name of the site (avoid using control characters such as &, *,').
Panel Type:	Select between Refrigeration or HVAC/ BMS. The selection of which will dictate which menus will be visible.
Console Language:	Select the language to be displayed on the console(s).
Time-Zone:	Select the time zone the DMTouch located.

Once complete, the Home Screen and menus will be accessible.

Connecting to miniDM Via USB

The miniDM can communicate directly to a PC using a USB lead. Depending on the PC's operating system, it may require the necessary USB drivers to be installed and configured. On Windows 10 machines or above, no drivers are required to be installed.

The miniDM platform does not require the user's PC network card settings to be altered to connect to the controller, it will self-configure.

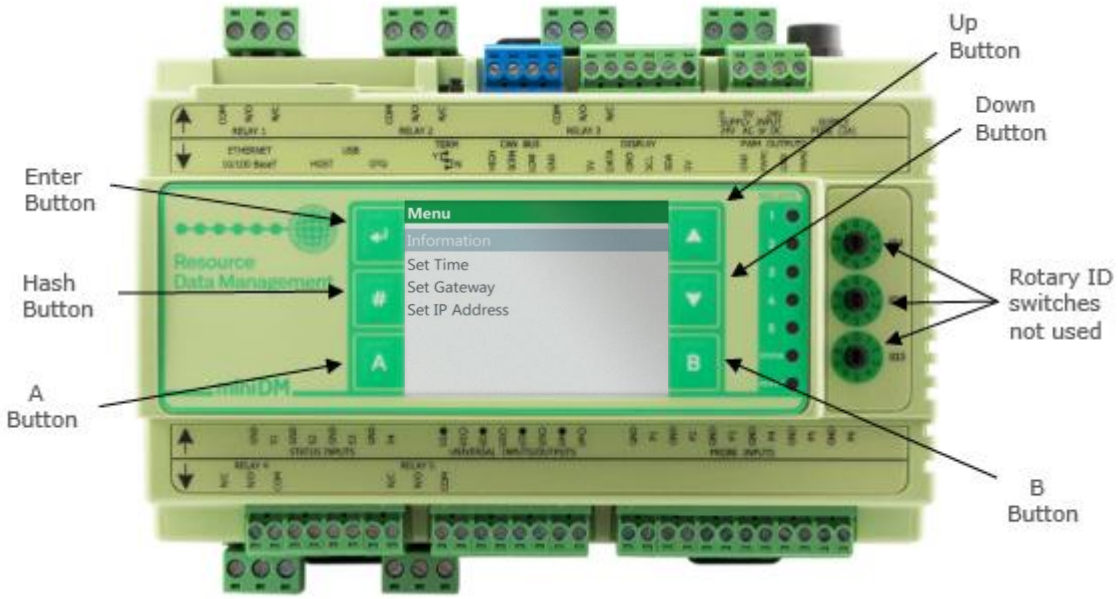
Power up the device allowing at least 30 seconds to complete booting. Then, connect to the miniDM by using a Micro-B to Type A USB cable and plugging the Micro-B plug into the OTG the USB port and the USB connection

into the laptop. It can then be accessed using a standard internet browser (such as Chrome, Edge or Firefox) and browsing to the address http://**10.1.2.75**.

Connecting to miniDM Via Ethernet Patch Cable

With the PC attached to the Device at eth0, start a web browser session and navigate to the IP address **http://10.1.2.75** The miniDM Ethernet port is Auto MDI-X so a crossover cable is not required.

miniDM Setup Buttons



The buttons will allow the user to navigate through the menus/screens of the device.

A -	Allows the user access the main menu
B -	Press B to move to the next item within the menu
Enter -	Press to confirm selection and enter selected menu
Up/Down -	Use to navigate up and down through the menus

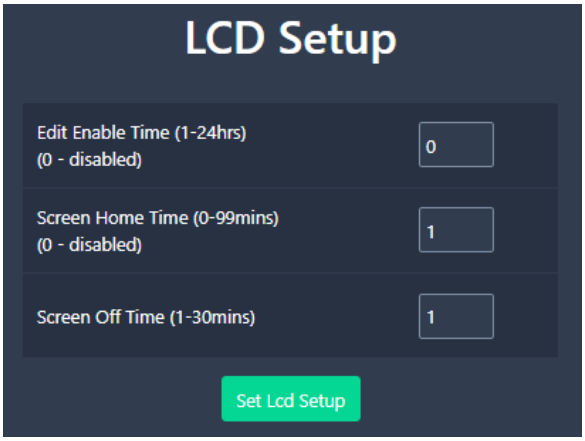
Note: The hash button and the rotary switches are not used on this device.

From the Service Menu select: System/Miscellaneous/LCD Setup

Edit Enable Time Determines the length of time that the user can make changes to settings within the LCD display

Screen Home Time Specifies the length of time before reverting back to the home screen

Screen Off Time Allows the user to specify the length of time before the screen switches off



Note 1: - This setup screen only relates to the miniDM LCD screen and will have no effect on the DMTouch.

Note 2: - The display on the miniDM is only supported on software version 4.1 and above

Home Screen

Depending on the DMTouch's setup, the Home Screen can be the Device List, Layout, Energy Monitoring or a Customised Home screen. For more details on their setup please consult the relevant sections.

The user interface will auto adjust depending on the size of screen it is displayed on. For example, on the DMTouch screen, the menus will appear along the bottom. On a wider screen, for example an internet browser, they will appear on the left, adjusting the size of the browser will automatically move the menus and items.

In both cases menus will appear similar to the below.



Buttons

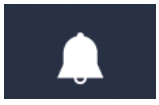

Home


Layout


Device List

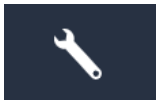

Energy Report


Reports


Alarm Log


Service


GP Run-On


Maintenance


SME Logout

By clicking on the desired menu, it will navigate to that particular section. Selecting the 'service' icon will prompt the user to log in with their credentials. Different log-ins have associated levels, dictating the menus accessible. The DMTouch periodically prompts the user to login, this is a security feature and will occur every 15 minutes.

Note: Maintenance feature not available on miniDM.

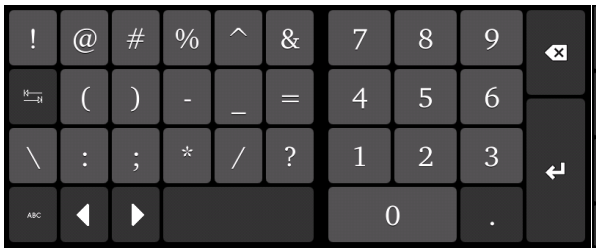
Interacting With the Touchscreen

The DMTouch display has no physical buttons or switches, all user interactions are carried out by pressing areas on the touchscreen similar to a mobile phone or tablet PC. The touchscreen should be operated using your finger and care should be taken not to apply excessive force as it could lead to damage. The DMTouch utilises a capacitive display technology and therefore objects such as pen nibs or screwdriver tips will not operate the display. Either a finger or a dedicated tool, such as a capacitive stylus pen, should be used when interacting with the DMTouch to provide the correct operation.

Each press of the display is accompanied by a click from the sounder. On some pages where lines of text are shown, such as the parameter list, the user can scroll down the page by running their finger from the bottom to the top of the list in the same manner as with a touchscreen enabled mobile telephone. During this motion the user's finger should remain in contact with the touch screen.

When entering information or setting parameters on the DMTouch, a keyboard will be displayed. Depending on the information that the DMTouch is expecting, it will show one of two layouts. One is numerical and the other is alphabetic. The user can change between the two by using the 'ABC' button on the numerical keyboard and the '123' button on the alphabetic keyboard. Both these buttons can be found in the bottom left of the keyboard. See below for pictures of keyboard layouts;

Numerical



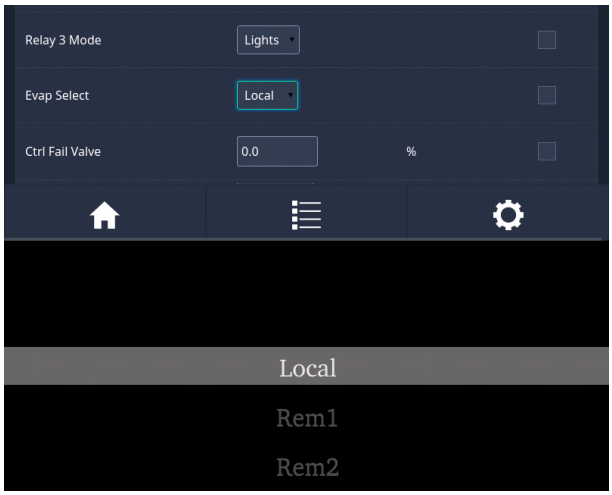
Alphabetical



Drop Down Menus

Using the DMTouch front screen, for different settings, drop down menus are used for easy selection of items. Once the setting button has been pressed, the selection menu will show all available options at the bottom of the screen. Scrolling up and down through the menu will allow the user to select the required option.

Below, it shows what the drop-down menu will look like after pressing the item to be changed.



Touch Screen Home Drop Down Menu

At the top left-hand corner of the DMTouch screen the details of the Site Description are shown. Pressing on this area will allow the user to refresh the browser running on the DMTouch or view details on the browser build. The menu will retract automatically after a time, else, press the home button again.

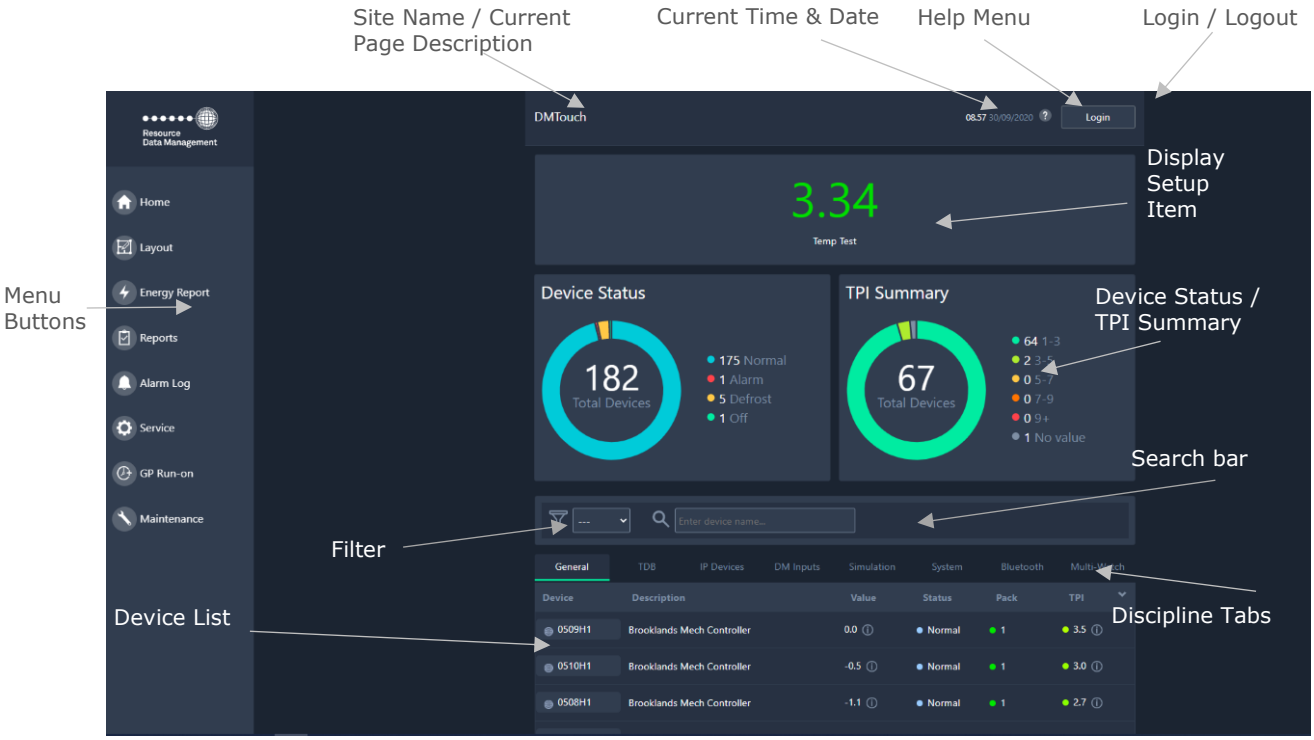


Note: The Touchscreen section is only in relation to the DMTouch, not the miniDM.

Device List

Shown below is an example Device List from the DMTouch home screen.

Note: If connected to a miniDM, it will say miniDM above the site name.



The columns within the Device List shown are as follows:

Device: Device Name.
Description: Device Alias.
Value: Current Value (if used). E.g. a refrigeration cabinet's current Control Temperature.
Status: Current state.
Pack: Pack Optimisation Performance Indicator*
TPI: Case Temperature Performance Indicator*

*Only viewable when the necessary energy features have been enabled.

Note: By clicking on the column headers, the device list can be sorted to display in either ascending or descending order as per the chosen header.

The status field is colour coded to indicate the different states in the device list and graphs:

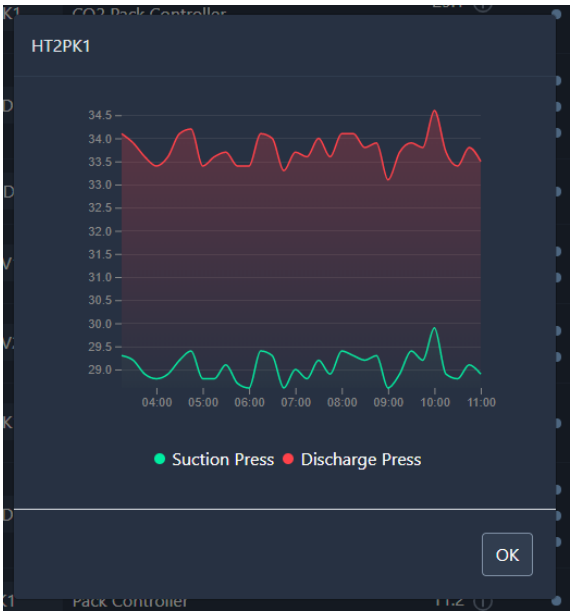
Red: Alarm
Blue: Normal*
Yellow: Defrost*
Light Blue: Recovery (graph view only)
Green: Case Off
Orange: Alarm Inhibit

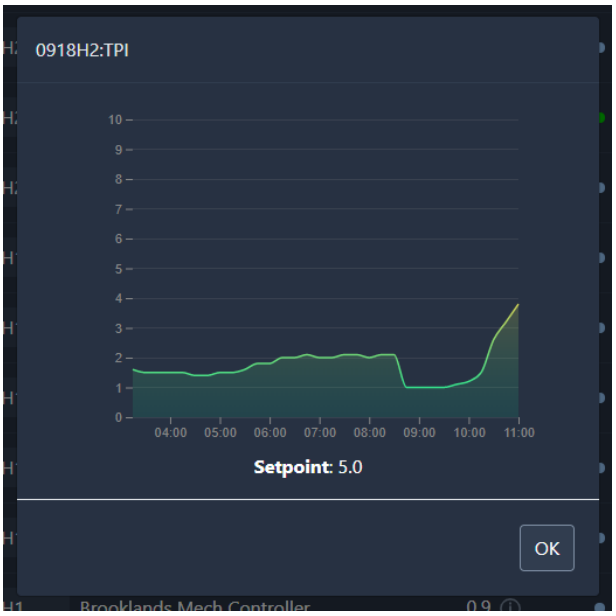
The filter option is a drop-down menu which allows only the devices that are currently in that state to be displayed. The options to choose from are as follows:

---: Displays the full device list
Alarm: All devices currently in an alarm state
Offline: All devices that are currently offline
Defrost: Any devices that are currently in a defrost cycle
Off: Any device that has been set to Off
Inhibit: All devices that are currently set to inhibit

The search bar can be used to search for a device by its name as shown on the device list. Enter the name of the device required, hit the return key and the device list will the scroll to that device.

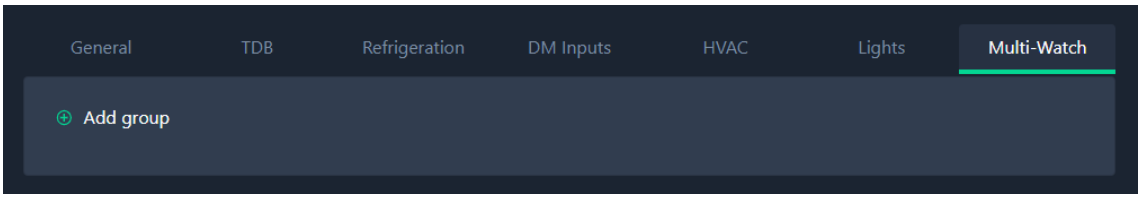
Further information on each device can be viewed by clicking on the desired device from the list.
*When a device is in the 'Normal' or 'Defrost' state, the state strings passed through to the device list. E.g. if a system is in the Defrost state, and its state shows 'Df Min' – this will be shown in the device list.
Quick-access graphs can be viewed by clicking on the 'ⓘ' symbol if present within the 'Value' or 'TPI' boxes. An example of each is shown below.



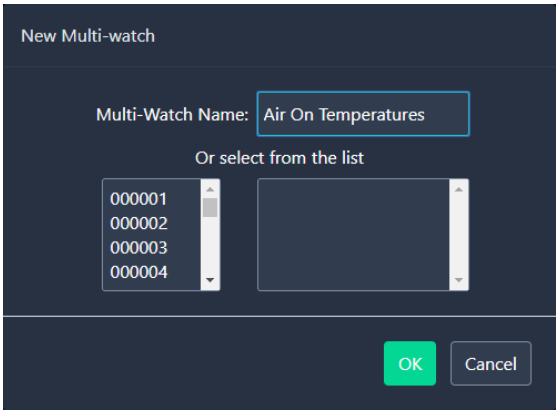


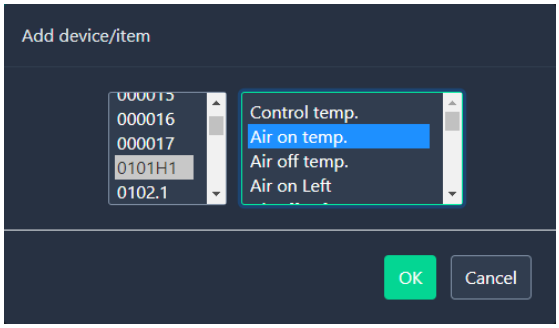
Multi-Watch Tab

The Multi-Watch tab is viewable from the Device List located within the Discipline tabs. It allows users to select multiple items from different devices to monitor their values in a real time graph.



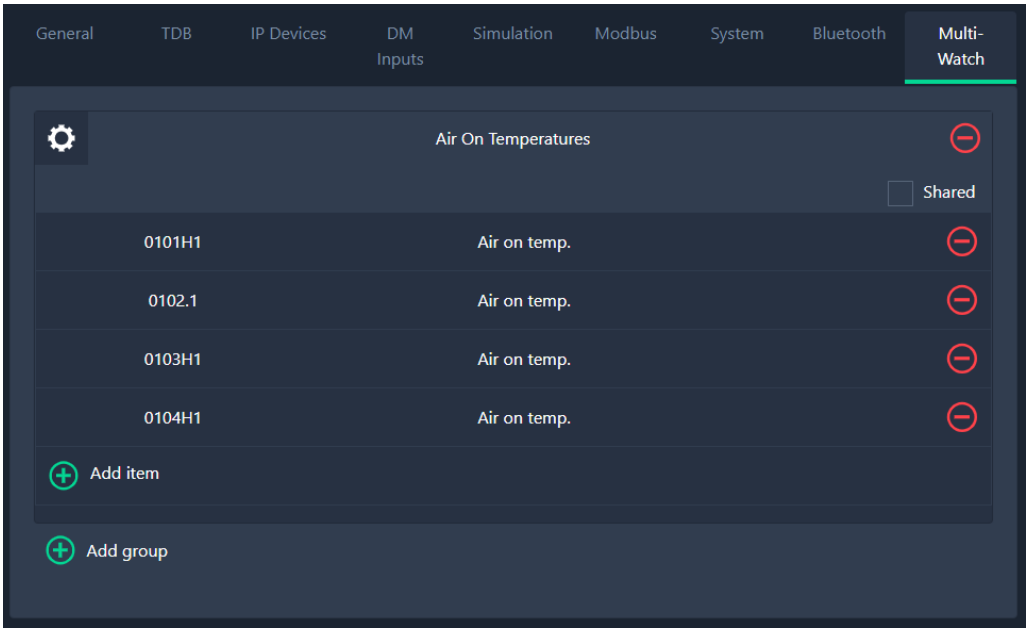
To add an item to monitor, firstly add a group and alias it. The alias can either be typed manually or selected from an item listed in the device list.





Then select the 'Add item' button to add a device and associated item. The user can select multiple items from a single device by holding down the 'ctrl' or 'shift' key on the keyboard while selecting (else selecting multiple when using the Touch Screen). Repeat the process to add more items.

Once all devices and items have been added it will look similar to below. Individual items or the entire group can be deleted by selecting the 'delete' icon (red). Other 'groups' can be added by selecting the 'Add Group'.



When a group is created within the multi-Watch tab, it is only viewable on the device (user's PC, phone etc.) that it was created on and will remain local to that device unless the 'Shared' box is checked. Selecting the 'Shared' box will permit other devices/ users to view the group when they view it from their own device.

To view the real time graph press/ click on the Group's name ('Air on Temperatures' in the above example). This will result in the graph similar to below. Within the graphing area the period it shows can be selected from the drop-down menu, also shown in the below image.

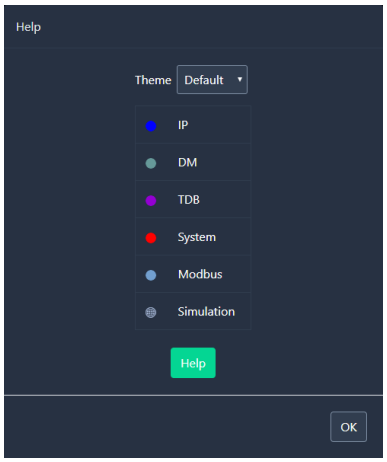
Note: - If more than 4 items are selected then the 48 hours logging period will not be available and if more than 6 items are selected the logging period is restricted to 15 mins only.



Help Button/ Device Key

Selecting the Help Icon will open a similar window to below. From here the user has the option to quickly change the current Display Theme local to their browser. The current user guide for the DMTouch can be obtained by selecting the 'Help' button.

When viewing the Device List, selecting the help icon will also show the colour key which highlights the different device types connected to the DMTouch.



Typical device items are:

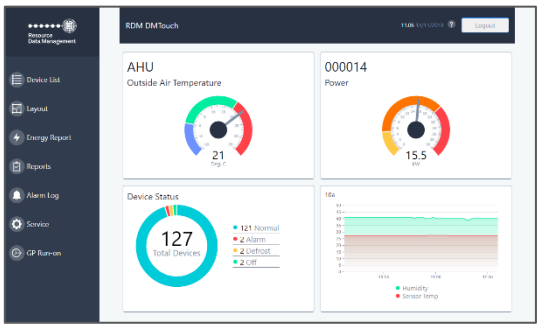
IP: IP Device e.g. RDM or 3rd Party TCP/IP Modbus Device
Genus®: RS485 Genus® Device
DM: DMTouch Local IO
TDB: DMTouch TDB program
System: System Device e.g. Condenser TD Channel
Monitor: Split Monitor e.g. Mercury Monitor Split via Split Monitor Feature
BACnet®: BACnet® Device
Wireless: RDM Bluetooth Modules
Split: Device Created from Split Device Feature
LON®: Danfoss® LON® Device
Tektroniks: Tektroniks
Modbus: Modbus Device – Networked via USB to RS485 Adapter (PR0623)
Wireless BD: RDM Bluetooth Remote Battery Probe

Local Theme

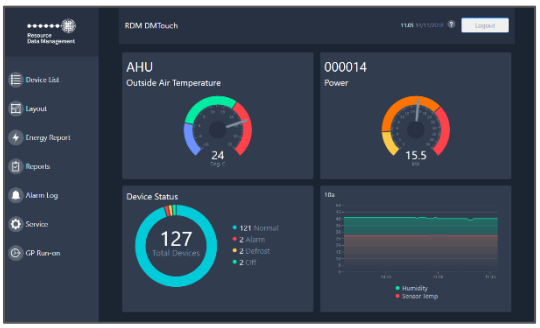
From within the Help Menu, selected from an internet browser, the user can select the colour 'Theme' of the DMTouch. The selection made here will only affect the user's local browser and not that of the DMTouch, TouchXL Orbit or a separate session connected from another browser.

Default: The default setting is that of which has been set within the Site Setup menu.
Light: Specifically show the DMTouch in Light mode.
Dark: Specifically show the DMTouch in Dark mode.

Light

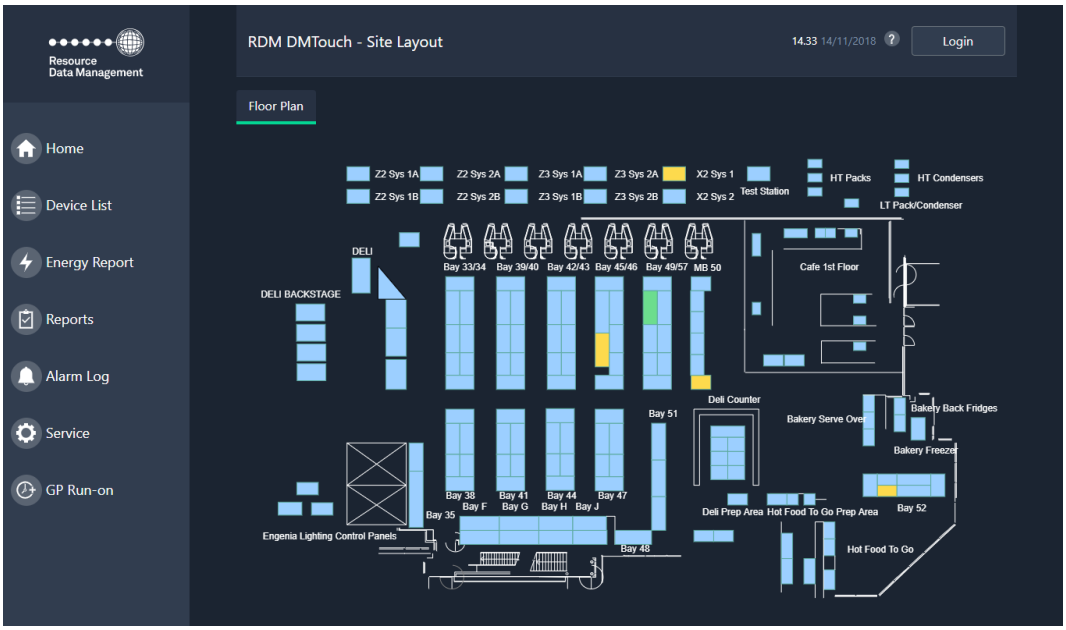


Dark



Layout

If a layout diagram has been loaded during commissioning, then a screen similar to the one below will appear as the home page. Depending on the configured layout, clicking on it will zoom in, or clicking on a device will take the user to a list of the values for that device.

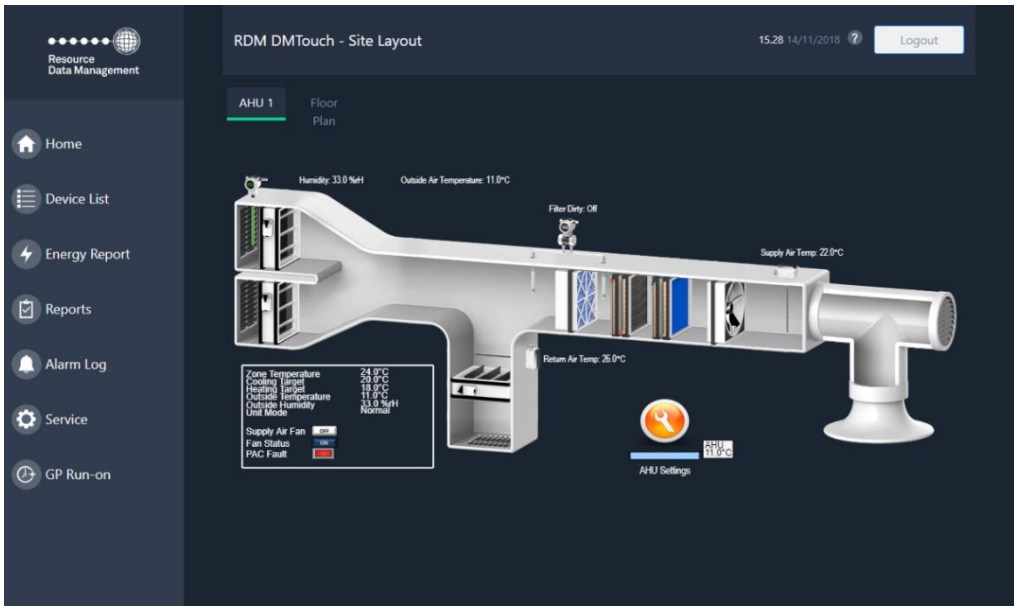


Layouts are created using the RDM Layout Editor 3 software where devices can be mapped and customised to the user's specification. When devices have been configured the layout will give an over-view of their states colour coding them for easy reference.

Colours defining device states are:

Red:	Alarm
Blue:	Normal
Yellow:	Defrost
Green:	Case Off
Orange:	Alarm Inhibit

Below is an example of image created for an air handling unit. Contact Technical Support for further information on Layout Editor 3.

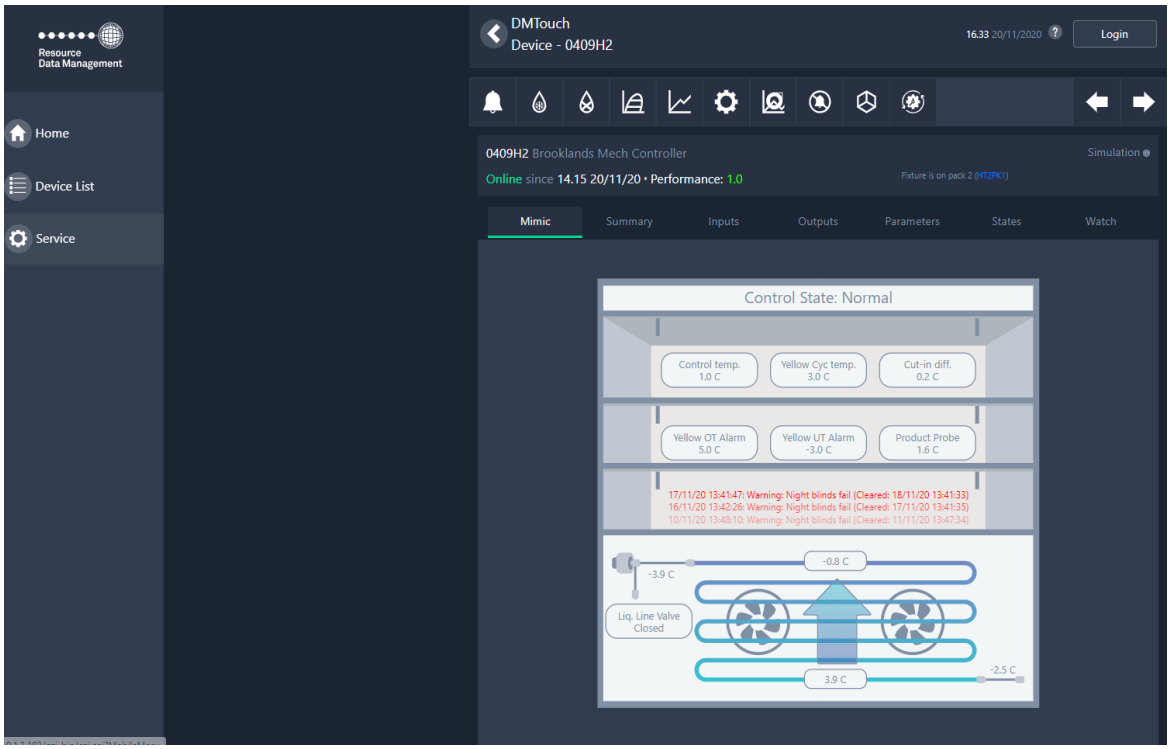


Note: - On the miniDM the layout size must be less than 16MB

Please ensure all power is switched off before installing or maintaining this product.

Device Values Page

Clicking on a particular device on either the Device List or a Layout will display that device's values and / or alarm status. An example is shown below.



The data on this screen will vary according to which device is being viewed.

Buttons

Alarms	COP	Optimisation	Previous Device
Start Defrost*	Graph	Inhibit	Next Device
End Defrost**	Set Values	Profile	Override
Parameter History			

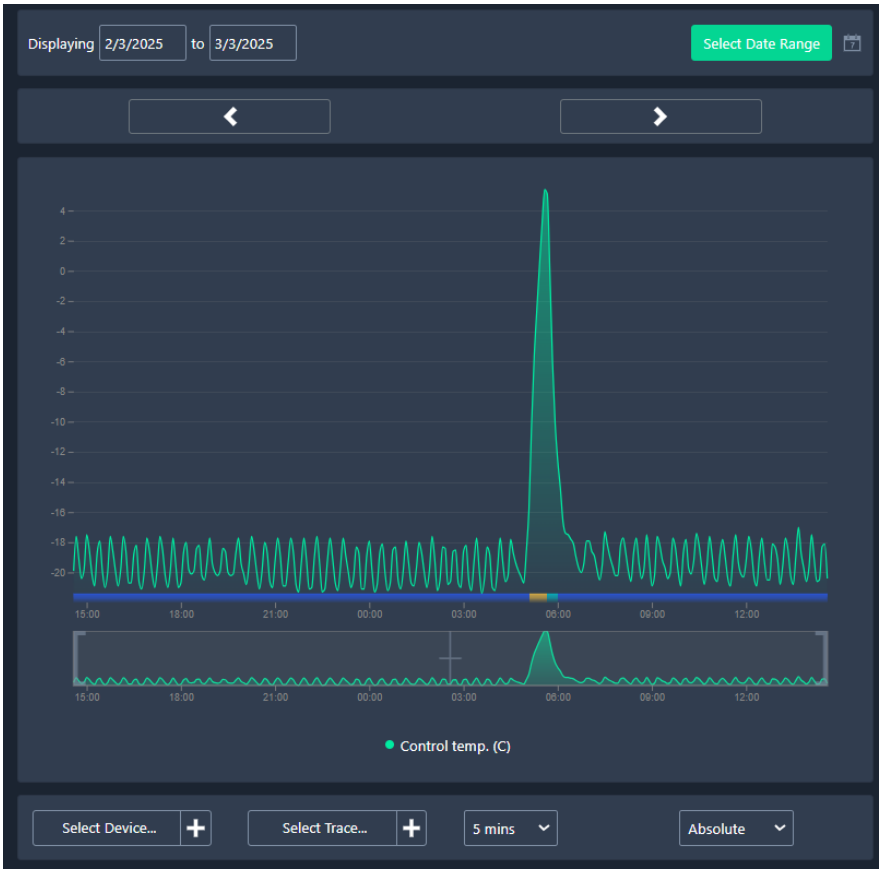
***Note:** On RDM devices, defrost commands sent from the DMTouch, will only be permitted when the device is set to 'remote' defrost.

****Note**: On RDM devices, the Defrost Termination command will end a defrost regardless of control state (Def Max, min etc.) or if the device is set to 'local' or 'remote'. Not all devices are compatible and those which are must have software versions matching the release date of this feature. For 3rd party devices please check with manufacturer for compatibility.

Graph

Clicking the graph icon opens the log data for the past 24 hours. Users can customise the data range and add additional controllers using the "Select Device" option, allowing them to overlay data from multiple controllers for comparison.

The "Select Trace" option enables users to toggle specific inputs and outputs on or off as needed.
Log data can be displayed in intervals of 15 seconds, 1 minute, 5 minutes, 10 minutes, or 60 minutes.



Additionally, a search function in the bottom left corner helps users quickly locate traces, especially when working with controllers that have a large number of inputs and outputs (e.g., Super Pack / TDB controllers).



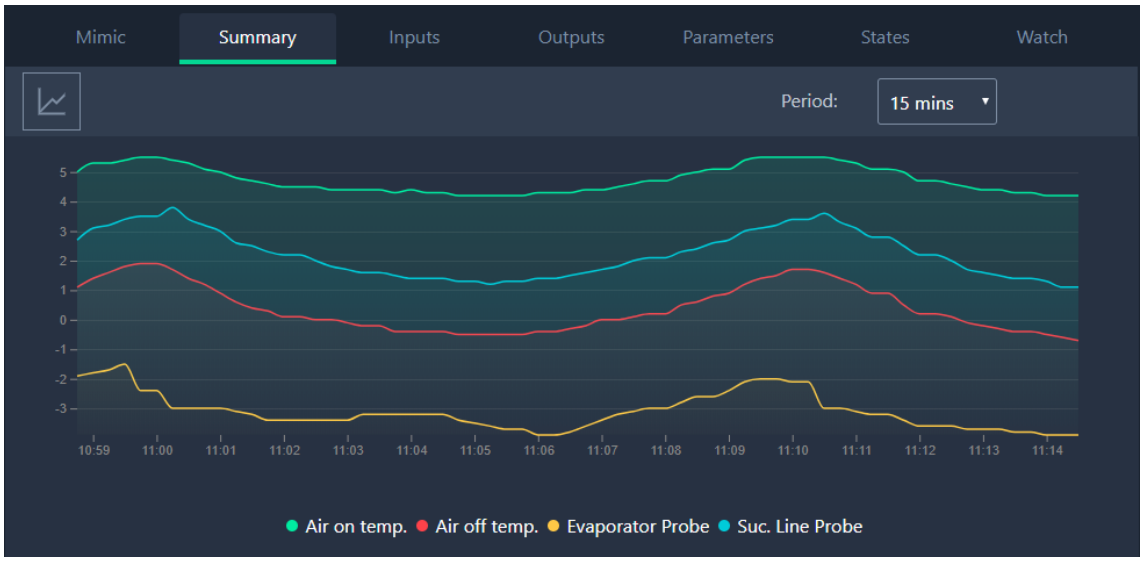
Device Tabs

For Simplicity, tabs are used to distinguish between mimics, I/O, states & graphs of each device. The available tabs are:

Mimic: When configured in the Mimic Setup page, the relevant mimic will be shown.
Summary: Dynamic real-time graph showing the main 'control values', these can be setup within Item Matching section. Also see Summary Tab.
Inputs: Lists all the device's inputs and their values.
Outputs: Lists all the device's outputs and their values.
Parameters: Lists all the device's parameters and their values.
States: Lists all the device's states and their values.
Watch: Dynamic real-time graph of items selected from within the Inputs, Outputs, Parameters and States tabs. User selects items by checking the box in the 'Watch' column next to the item. Also see 'Watch Tab'.

Summary Tab

Entering the Summary tab will permit the user to view the dynamic real time graphing of the 'Control Values'. The graph will automatically scroll and refresh in accordance to the selected period (15 mins, 1 hour, 6 hours, 12 hours, 24 hours & 48 hours)

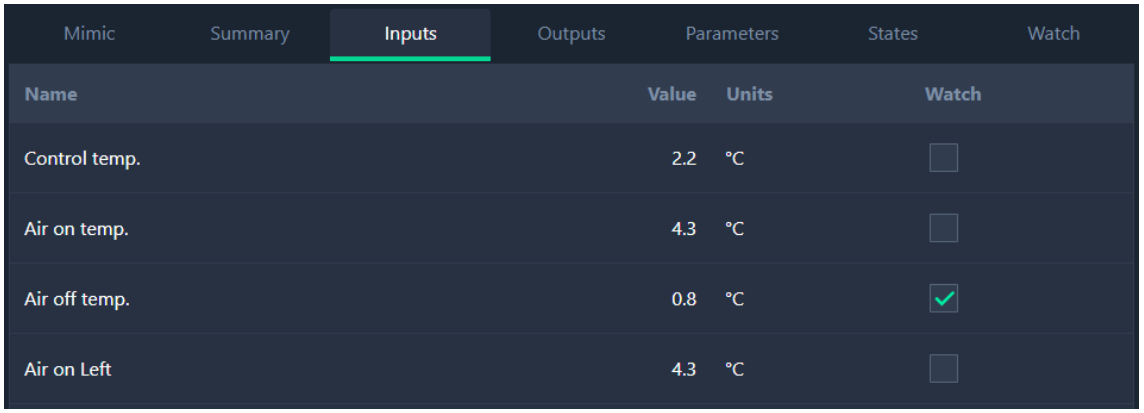


The DMTouch will select up to the first four 'Control values' it can automatically identify. If it can, it will preferentially select Air-on, Air-off, Suction and Evaporator temperatures (Suction & Discharge pressures for pack controllers).

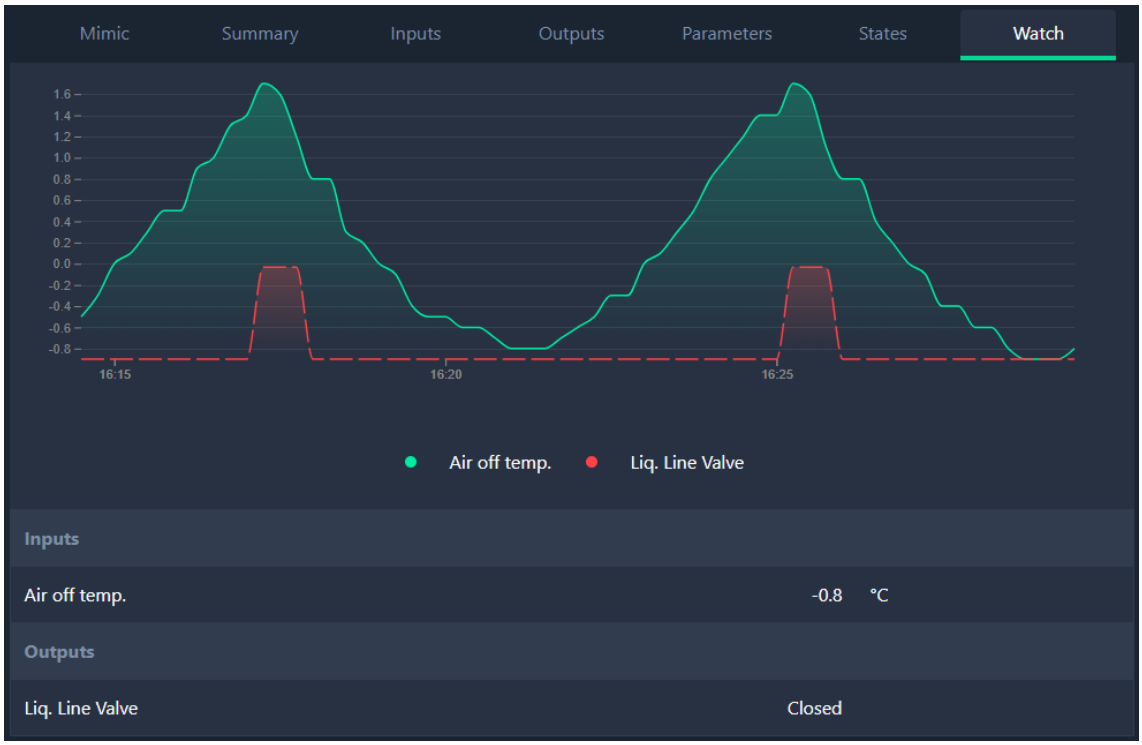
The graph is time stamped and the user can also temporarily hide certain traces by clicking on the name of the control value beneath the graph.

Watch Tab

Similar to the Summary tab the 'Watch' tab will also permit the user to view dynamic real time graphing. However the Watch tab permits the user the ability to add whichever traces they would like to monitor from the Inputs, Outputs, Parameters and States.



In order to add items to the 'Watch' tab the tick-box next to the desired item must be checked. Any of the items found in the Inputs, Outputs, Parameters or States tab can be selected. Performing this action will automatically add the item to the 'Watch' tab for monitoring.



The graph will automatically scroll, refreshing the data every 15 seconds* and will show traces over a 15-minute window. The graph is time stamped and the user can also temporarily hide certain traces by clicking on the name of the control value beneath the graph.

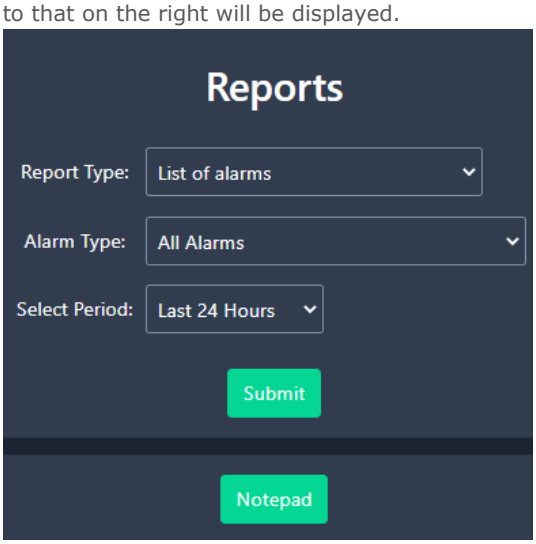


Reports

From the Home Page click on the Reports icon. A similar page to that on the right will be displayed.

Report Type: The style of report to be generated in the report can be selected from the drop-down menu. Select from:

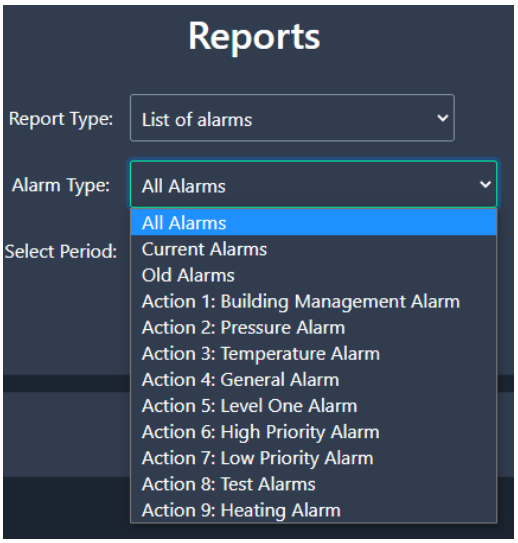
List of Alarms
Graph of alarms by device
Count of alarms by device
Graph of alarms by alarm
Count of alarms by alarm
Graph of OT alarms by device
Count of OT alarms by device
Graph of offline alarms by device
Count of offline alarms by device
Night blinds report
Energy Report



Alarm Type: The information used to generate the report can be selected from the drop-down menus. Select from:

Current Alarms
Old Alarms
Action 1
Action 2
...
...
Action 9

The example on the right shows the alarm type with the list of alarm actions after they have been configured with actions names in the alarm actions page. This allows reports to be filtered down by a specific alarm type. This allows the user to easily check what type of alarms are generated and causing potential problems which require future investigation.



The data can be viewed in tabular or graphical form. The user can also define the hours from which information is gathered to generate the reports, such as the trading hours for that site:

Out Of Hours Constructs reports with data obtained from the out of hours/ time period e.g. when the site is closed.
Normal Hours Normal operating hours of the DM e.g. site opening hours.
Select Period From the drop-down menu select the time period; Last 24 Hours; Last Week; Last 2 Weeks; Last Month; Specific Period.

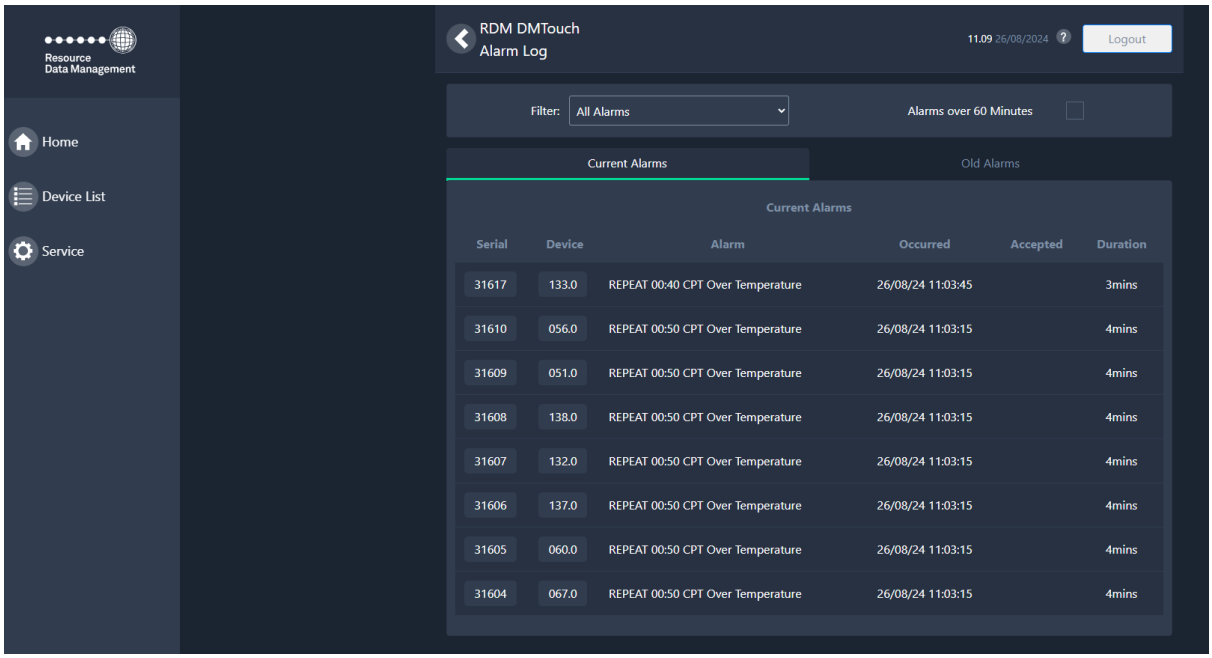
Once configured click the 'Submit' button to retrieve the data.

Alarm Log

From the Home Page click on the Alarm Log icon. Shown below is an example list of alarms, where both Current and Old alarm information can be viewed by selected the appropriate tab. Additionally, there is a filter menu where you filter the alarms by 'All' or by the alarm action the alarm was generated on. The details of the alarms are as follows;

Serial The unique 'Serial' number of the alarm – clicking on the link will display more details on the individual alarm such as actions taken
Device The name of the Device that generated the alarm – clicking on the link will take the user to the device which alarmed.
Alarm The alarm description.
Occurred Time & Date of when the alarm occurred.
Accepted Time & Date of when the alarm was accepted (if applicable).
Cleared Time & Date of when the alarm cleared.
Duration The length of time that the alarm was active

At the top left of the page there is an option to only show alarms that have been active for over 60 minutes



Note: To view older alarms, simply scroll down and the alarm log will keep populating the alarm log as far back as it can go.

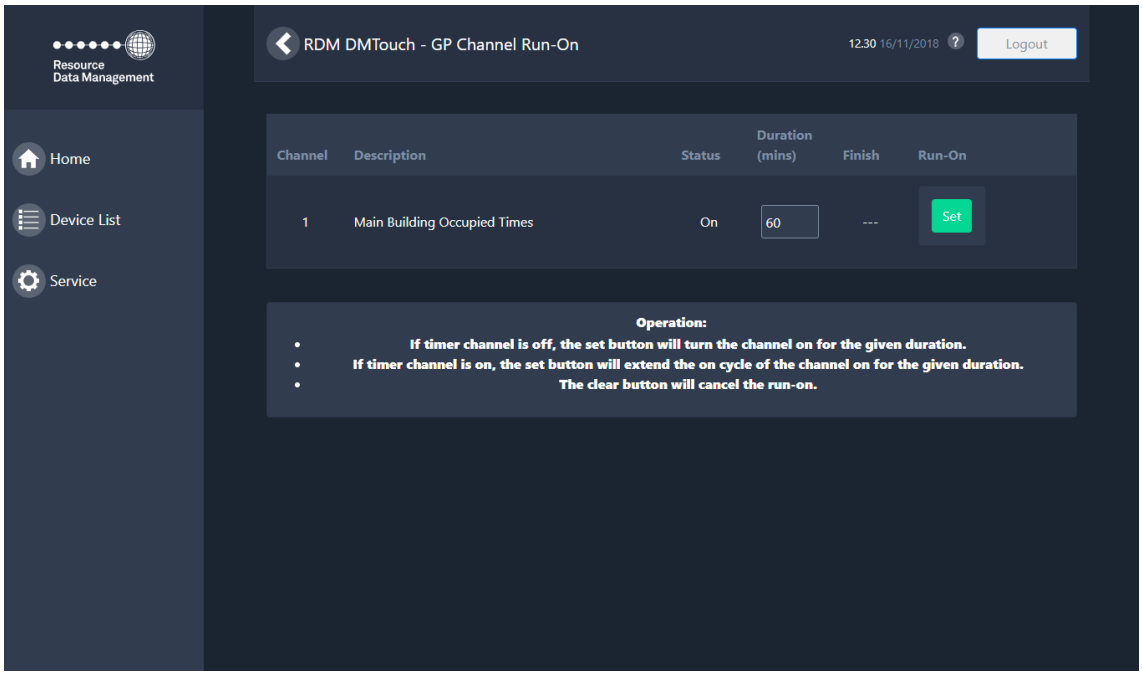
Accepting Alarms & Appending Comments

To allow the appending of comments to alarms while accepting them, firstly ensure the 'Alarm comments' feature* is enabled under the Site Setup page. Navigate to the Alarm Log from the Home Page as shown above and select the alarm to acknowledge by clicking the 'Accept' button. At this point the user will be asked to login (if not already). Once logged in, the comments can be entered and associated to the alarm by clicking 'Add Comment'. For more information on setting alarms please consult the Alarm sections.

Note: the 'Accept' button will also not appear if the alarm's actions have been configured to log only.

GP Run-On

When the user clicks on the GP Run-On icon a page similar to the below will be displayed. It lists all the GP Timer channels that have been configured to permit 'Run-On'. For more details of how-to setup, the channels please consult the GP Timer Channel Setup section. The page will list the channel details, its current status, the allowable override (run on) time and its finishing time.



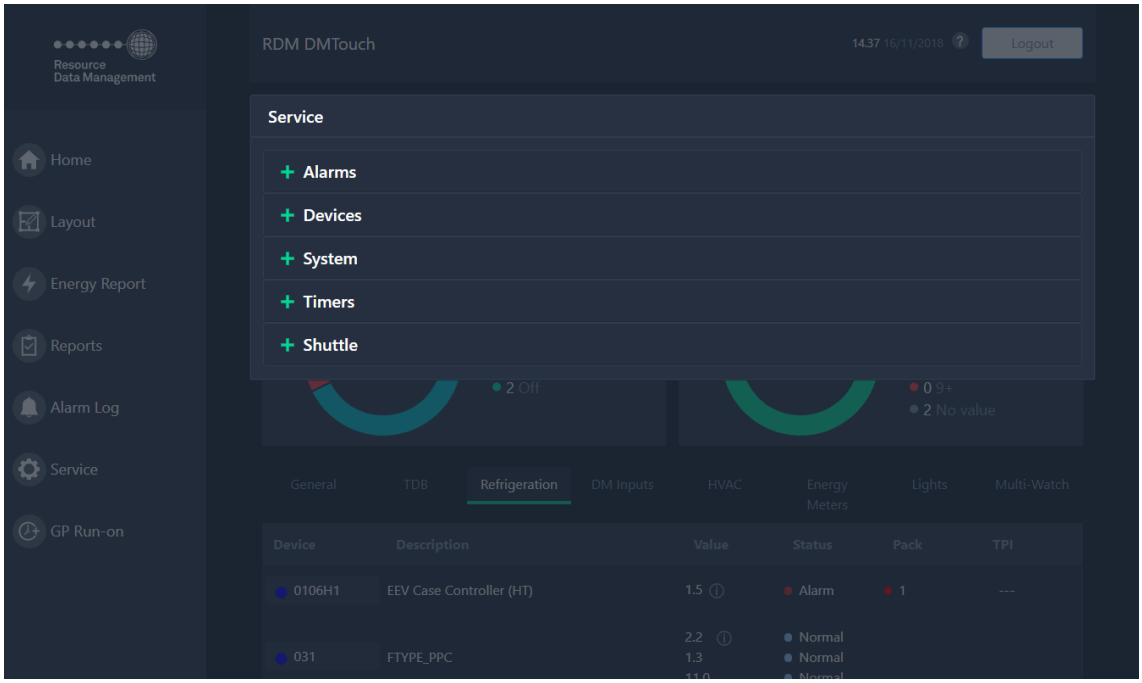
GP Run-On Operation

For a GP Timer channel to appear in this list it must have its 'Run-On' option set to 'Allowed'. The maximum allowable run-on limit is defined on the site setup page. Enter a duration, in minutes, into the desired channel and click the 'Set' button to enable the run-on.

If a GP timer channel is 'Off', the set button will turn the channel 'On' for the given duration.
If a GP timer channel is 'On', the set button will extend the 'On' cycle of the channel for the given duration.
The clear button will cancel any run-on initiated for a given GP Timer channel.

Service

The Service button provides access to the different features and configuration options available in the DMTouch. From any screen, click on the service button (single cog) where it will prompt the user to log into the panel. When logged in (or if already logged in) a drop-down menu will be shown similar to the below.



The five main service menus are as follows;

- Alarms
- Devices
- System
- Timers
- Shuttle – if enabled

Note: Icons and menus may not be exactly the same as depicted in this document or in the same location.

Default Username, Password & Pin

From Software version V2.7.2 and above the default username and password is unique to every individual panel. The specific credentials will be detailed in the documentation that ships with the unit.

The user name will be '**install**'.
The password will be '**PleaseChange**' followed by the panel ID (found within the log in page).

For example: **install**
PleaseChangeBC123456

The end user MUST add their own install level user.

These default credentials will only be enabled when accessing the system locally (front panel or TouchXL) or from within the systems local subnet. Additionally, If the end user wishes to add the username and password 'install'/ '1234' (not recommended), they will also only ever be enabled when accessing locally (front panel or TouchXL) or from devices within the local subnet.

For increased security the likes of Active Directory, LDAP or RADIUS can be used. Please see the Authentication Setup section for more details.

Note:

In the unlikely event the front panel PIN and username and/or password is unknown, for example a new service contract is undertaken and the previous contractor has not passed across the login credentials, it is possible for RDM Technical Support to generate a Data Manager specific, time limited, 'ONCE' code which allows temporary access to only the Data Manager in question at install level allowing an engineer to add a new 'Install' level user. To do this RDM requires in writing, from the end-user/owner of the Data Manager, permission to provide access to the Data Manager. There will also be an administration charge for this request.

For further information please contact Technical Support.

User Access Levels

Access levels are assigned when adding new users from within the User Setup menus. Users can only assign a level of that equal or lower to their own. The level of which the user is assigned dictates the level of menus available for them to view or edit. A table of features and the required access can be found in Appendix 8.

Repeated Login Failures

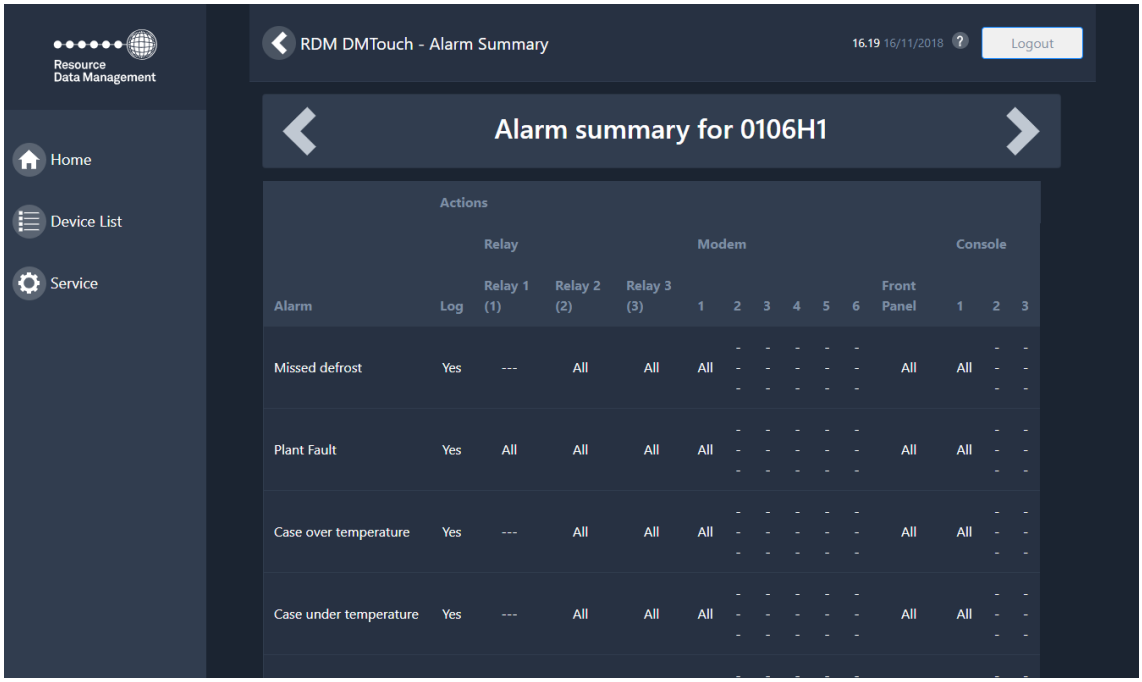
As default, the DMTouch has in-built security whereby users are automatically locked out on repeated failed log in attempts. The default number of permitted log-in attempts is 5. If this number is reached, the user will be locked out for 1 hour. This feature can be disabled within Site Setup.

Alarms

Alarm Summary

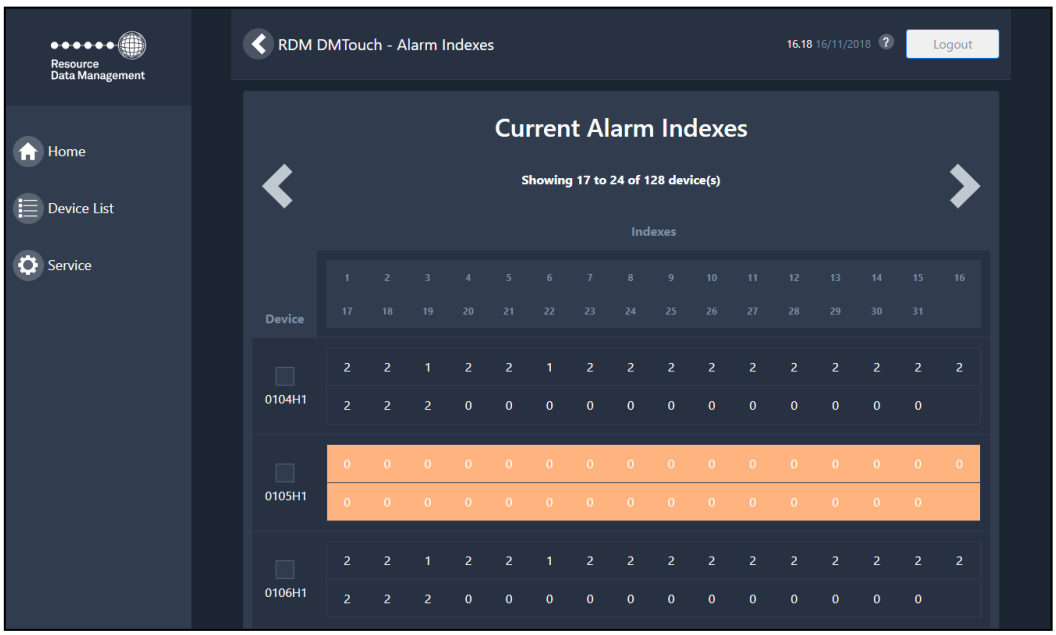
From the Service Menu, select: Alarms/ Alarm Summary

This feature presents a summary of the alarm actions assigned to each alarm generated for a given device. This allows a user to easily and quickly check the alarm actions assigned on a device-by-device basis to ensure the appropriate alarm cover is configured. Entering the menu shows a list of every device logged on to the panel, click on the desired device to view the alarm configuration for the device. This is a 'Read-Only' feature.



Alarm Index

From the Service Menu, select: Alarms/ Alarm Index



The Alarm Indexes matrix, shown above, is used to map device's alarms, which are called Indexes, to a particular alarm Action number. The action numbers assigned relate to the specific Alarm Action which are setup in the following section, they range from 0 – 9.

Multiple devices, with the same type of alarms, can be set from this page. Any settings configured on this page will override the default actions assigned to the device when it was initially logged on. Refer to the specific device User Guide for a definitive list of alarms and associated index numbers. Alternatively view the device's indexes from within the Alarm Aliases section.

Configuring an alarm's index to action 1 - 9 allows the user to steer the alarms to the selected destination set within the Alarm Action page. If all the Alarm Indexes of a particular device are set to Action 0 then it will be highlighted in orange as shown above. Alarm Action 0 will result in the alarm being recorded in the DMTouch Alarm Log only.

The description of the alarm indexes shown in the bottom table within this page will not represent what comes through from the controller. The specific device user guide will outline a complete description of its alarms.

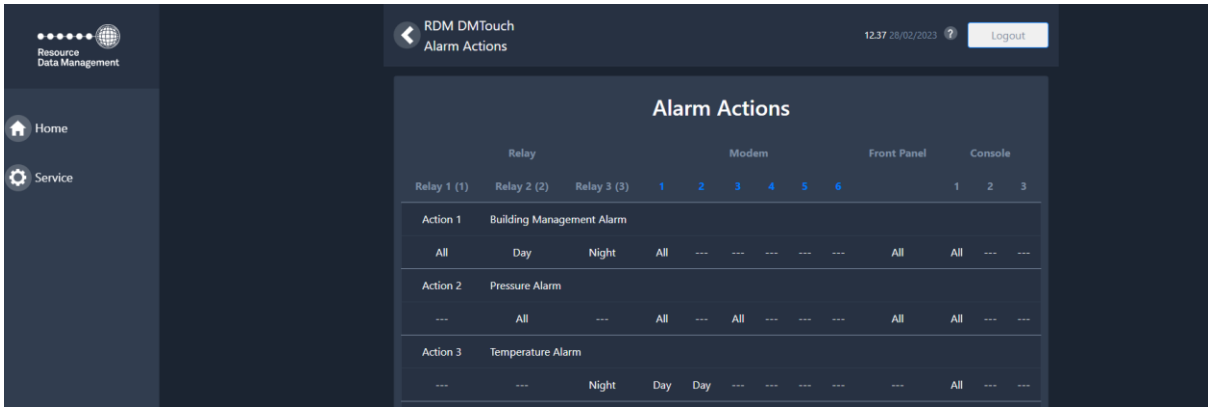
Note: when replacing a device or communication module it is important to check that the device has the correct alarm indexes and that alarms are being directed to the appropriate Alarm Action. This ensures the appropriate response occurs when an alarm is generated.

The alarm action name that appears in the drop list is configured in the Alarm Actions setup page.



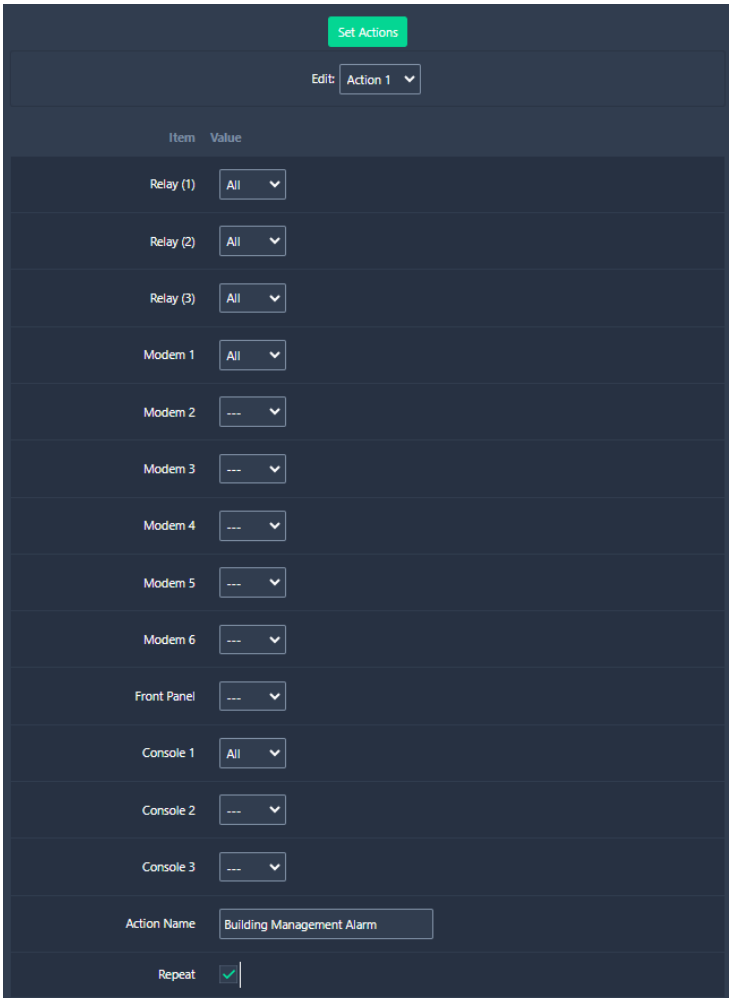
Alarm Actions

From the Service Menu select: Alarms/ Alarm Actions



The Alarm Actions steer alarms to a variety of physical and virtual outputs, whose purpose are to highlight an alarm condition to the end user.

Upon entering the page, it will have a summary table of the actions at the top (shown above) and a section below it to set the required actions (shown below).



Each alarm action can be named so that they can be easily assigned in the alarm index page. This name will also display in the Alarm Reporting section, where you can run a report on a specific alarm action. The name can be made up of letters and number and should not contain any non-alpha numeric characters (}[#>).

There is also the option to make an alarm against that particular alarm action repeatedly re-alarm after a time specified in the Alarm repeat timer option within the site setup page.

Action

From the 'Edit' drop down menu, select which action to amend. The Actions range from 0 – 9 and Fail. Within each action the user has the option to select the destinations of the alarms, e.g. Relay, Modem, Front Panel and Console - see the relevant sections below for more details.

Set the 'Fail' action to the destinations (such as the front panel) you wish alarms to be steered after an alarm has failed to dial out. The fail action will then be used until the next alarm has successfully dialled out.

Factory Pre-set Actions

Relay 1	Over-temperature (OT) and Offline alarms
Relay 2 & 3	All alarms
Modem 1	All alarms
Console 1	All alarms
Front Panel	All alarms

Note: Front Panel option not available on miniDM.

Relays

These represent the relays that have been configured from within the Outputs Setup section of the DMTouch. Note that the number shown in brackets is the physical relay position and that the preceding text is the name assigned to the relay in the Outputs Setup section.

Assign one of the options; None (---), Day, Night, or All against the action number and relay. All alarms associated with the action number will activate the relay. Note the relay is energised for no alarm and de-energised when in an alarm condition. Up to 3 relays are supported for alarm actions, but they must first be configured in the Outputs section.

Note: On the DMTouch, if an action has a relay selected, then it must also have Front Panel or Console selected.

Note: The relays on the miniDM are not there by default so have to be configured first in the Output Setup page to appear.

Relay Configuration

Alarm relays can be configured as one of three modes:

Accept	In this mode, the alarm relay activates when an alarm occurs. The relay de-activates when the alarm is accepted. A delay can be assigned to this mode which delays the activation of the relay. If the alarm is accepted before the delay period has timed out, the relay does not activate.
Clear	The alarm relay activates when an alarm occurs. The relay de-activates when the alarm clears. A delay can be assigned to this mode which delays the activation of the relay. If the alarm clears before the delay period has timed out, the relay does not activate.
Timed	In this mode, the relay switches as soon as an alarm occurs and remains on until the delay time has elapsed, irrespective of the alarm being accepted or cleared.

Modems

Up to 6 modems can be independently configured. In a similar way to relays each of the 6 modems can be assigned as; None (---), Day, Night or All. All alarms then associated with the action number will activate the modem. See Modem Setup.

Front Panel

Assign from None (---), Day, Night or All against the action number and 'Front Panel'. All alarms then associated with the action number will be displayed on the DMTouch display. When an alarm is directed to the Front Panel the DMTouch will display an alarm message, the alarm LED will flash and an alarm sounder will operate. This option will not be visible on the miniDM.

Console

Assign from None (---), Day, Night or All against the action number and 3 consoles. The consoles refer to additional TouchXL Orbits linked to the DMTouch. Each TouchXL connected to the DMTouch is assigned an index from 1 – 3 and their statuses can be viewed in the TouchXL Status page. For more information on their setup please refer to the specific documentation.

Click '**Set Actions'** when the matrix has been completed to your satisfaction.

Modem Alarm Test

Click this button to do a test alarm dial out via the modems configured – for more details on their setup please see the Modem Setup section. **Note**: this feature will not operate with any modems configured to send alarms as an SMS.

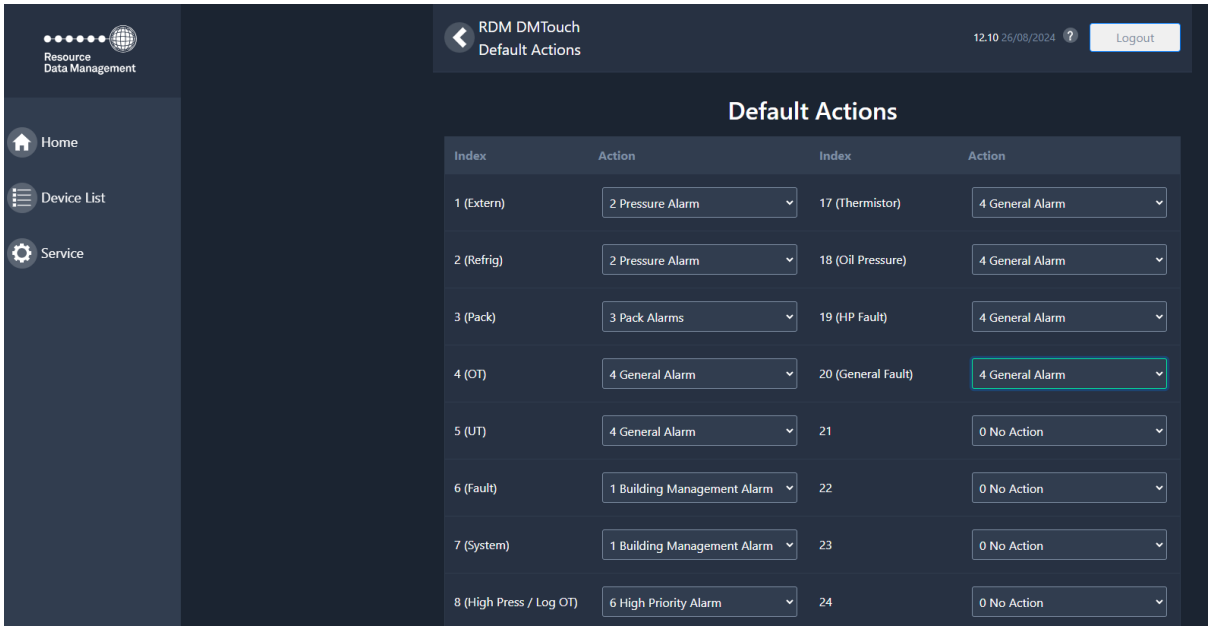
Mail Alarm Test

Click this button to send a test alarm to an email recipient. For more details on setting up mail alarms please see the Mail server and Modem Setup.

Default Actions

From the Service Menu select: Alarms/ Default Actions.

Note: Complete this operation before logging any device online.



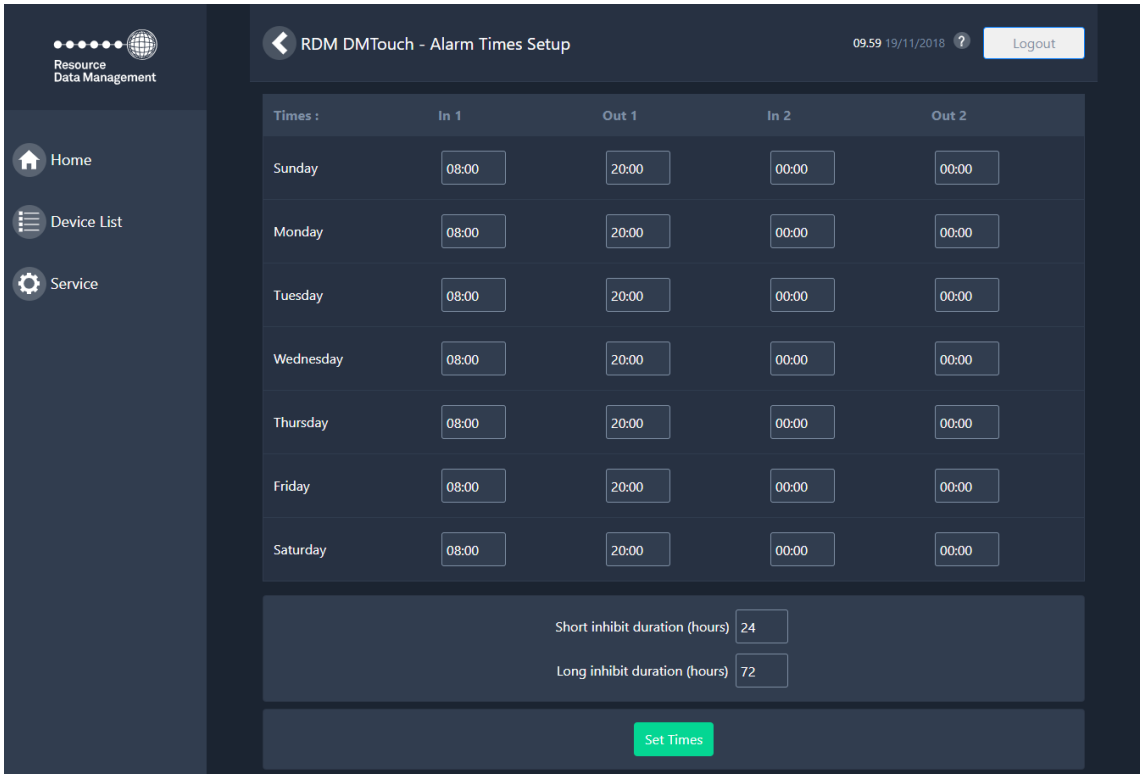
Assign each alarm index to an action number and click the 'Set' button. These actions will be used by devices as they come online before dedicated actions have been assigned. Once any device has been logged on, their alarm indexes can be changed using the Alarm Index section.

Note: this default process should not be relied upon and the end user must confirm that alarms are being directed to the appropriate actions.

Note: When making changes to the alarm actions or alarm indexes on the panel, RDM recommend that the panel is restarted so that the changes are updated.

Alarm Times

From the Service Menu select: Alarms/ Alarm Times



Use this page to define the 'Day' and 'Night' settings used in the alarm action setup. Each day can have 2 time periods. 'In1' and 'Out 1' define period 1; 'In 2' and 'Out 2' define period 2. All times outside of these 2 periods are classed as 'Night' times. If the user sets 'In1' and 'Out1' for a given day of the week to 00:00 the weekday configured would be classed as night for the 24-hour period.

In1: Day start period 1
Out 1: Day end period 1
In2: Day start period 2
Out 2: Day end period 2

Each day of the week can be configured to have a different Day/ Night period.

Additionally, the 'Short' and 'Long' inhibit periods can be configured from this page. The factory set default times are 24 Hours for the short Inhibit and 72 Hours for the long Inhibit.

Note: when a case is inhibited a system alarm is generated. This alarm can be directed via alarm indexes and is configurable for each device. The default 'Alarm Inhibit' index number is '6' and can be changed if required.

System alarm actions

The device 'System' will appear under the Alarm Indexes page. This allows for alarms generated by the DMTouch to be assigned actions. Possible alarms and their index numbers are:

Test fault	**6**
Disk warning	**4**
Blinds warning	**5**
Trim no probe	**3**
Dial out failed	**8**
Pack Fail Shutdown	**7**
DHCP Server Detected	**9**
Solid State Drive Read Only	**4**
Power Fail	**10**
Cleared Alarm Log	**10**
Blinds Malfunction	**5**
Warning: Defrost term on time	**6**

Power Fail

In the event of the mains power supply being interrupted the DMTouch will revert to its on-board battery backup hardware (PR0492), if fitted, and generate a 'Power Fail' alarm. RDM recommend that the battery from the on-board battery backup is replaced once a year. **Note:** the battery backup hardware is required for an alarm to be created. This is only relevant to the DMTouch, not applicable to the miniDM.

Condenser TD

When the Condenser TD feature is enabled, a device called 'CondTD' appears in the Alarm Indexes page. This allows actions to be assigned to the Condenser TD alarms. See Condenser TD setup.

Listed below are the alarms generated and their index numbers:

Cond N TD Alarm	**1**
Cond N TD Warning	**2**
Cond N TD Pre-warning	**3**
Cond N TD Discharge Probe Error	**4**
Cond N TD LiqRtn Probe Error	**5**
Cond N TD Ambient Probe Error	**6**

Where 'N' is the condenser channel set up.

Alarm Scoring

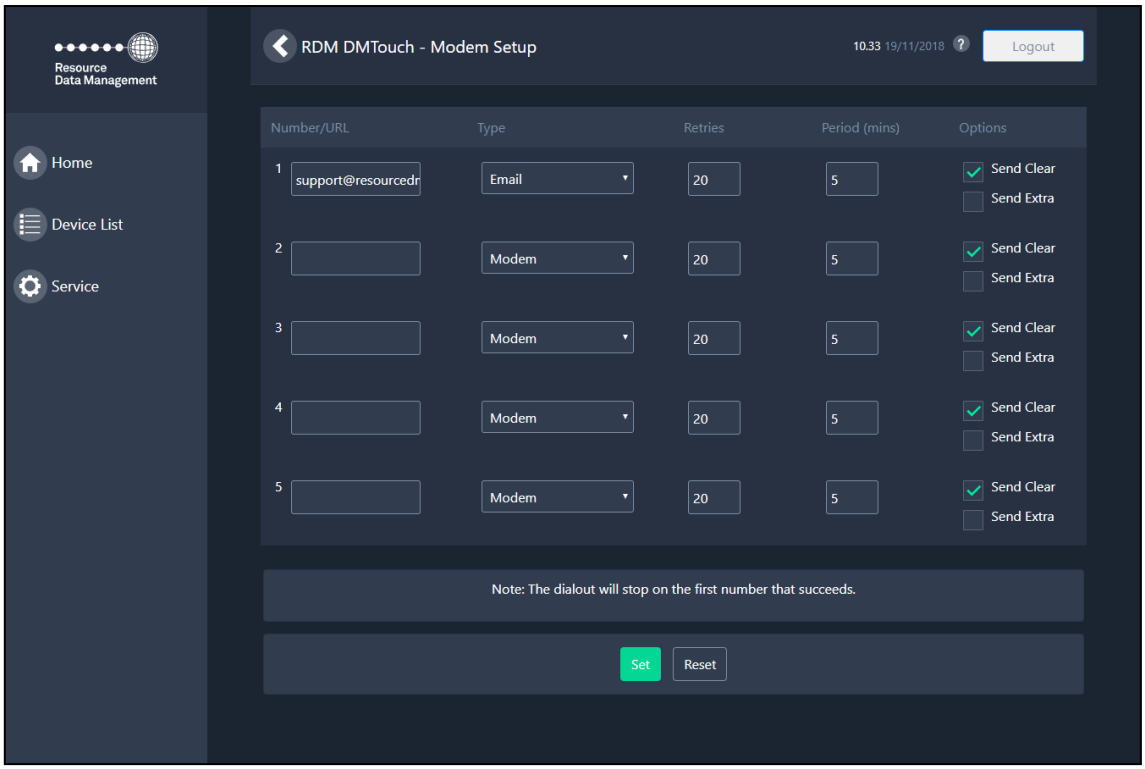
With each alarm sent by the DMTouch an alarm 'score' is calculated. This is exclusively for use with RDM ActiveFM remote monitoring solution. Please contact RDM for further details (Ethernet connections only).

Modem Setup

From the Service Menu select: Alarms/ Modem Setup

Note: On DMT V2.5 and above, the Site ID and Description must be set prior to modem setup.

There are 6 modems to configure. Select any modem and a screen similar to the following will be displayed.



Note:- Multiple email address can be entered into a single modem slot. This is done by separating the email address with a comma (e.g. support@resourcedm.com,sales@resourcedm.com). This was introduced in DMTouch software version 4.0. **Please be aware that using the above format on a lower version will have an adverse effect on the running of the panel.**

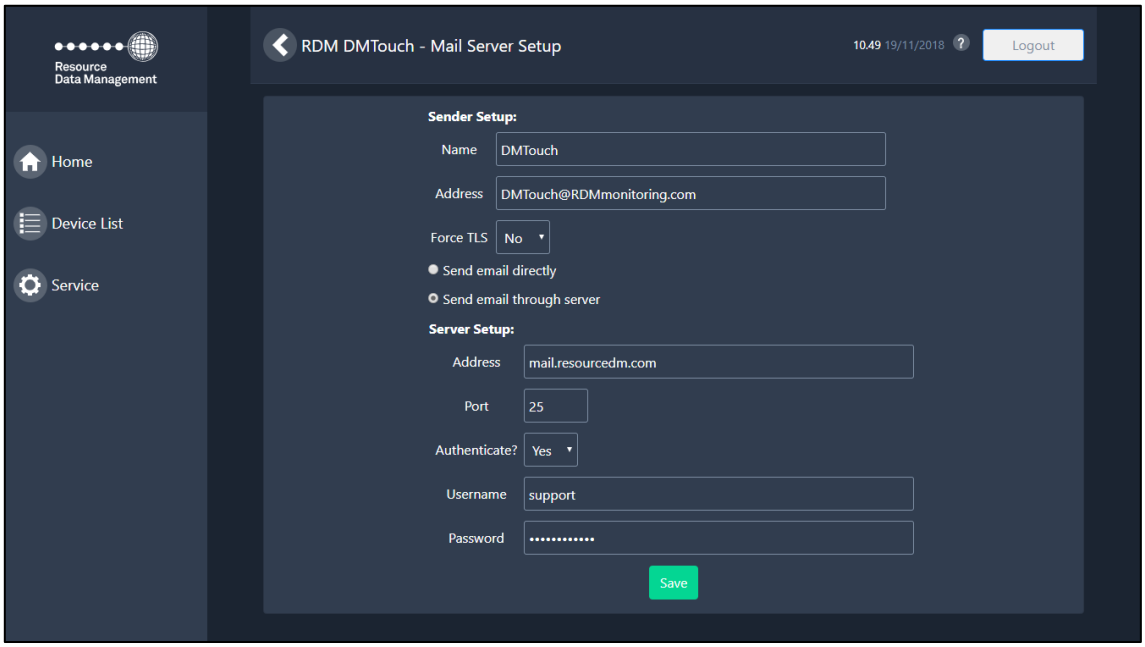
Enter the number, URL or email address you wish the modem to connect to, enter the number of retries (up to 20) and the number of minutes between retries. Set the type to one of the following options:

Modem	Select to direct alarms to an alarm receiver such as RDM's Monitoring and Remote Station (MaRS).
SMS	SMS (GSM Modem) must be chosen for a GSM Modem.
Email	Select for the alarm to be sent to an email address. **Note:** to send an alarm as an Email you must also configure the Mail Server Setup page.
Other	When selected, operates the same as Modem apart from test dial out alarms are not sent to the alarm destination.

Check the 'Send Clear' box to send a message when an alarm clears. Check the 'Send Extra' box if required, leave unchecked unless instructed by RDM, this enables additional features for use with RDM remote monitoring applications. Please contact RDM for further details.

Mail Server Setup

From the Service Menu select: Alarms/ Mail Server Setup



Here, the user can configure the DMTouch so that alarms can be sent to an email address. Select either 'Send email directly' or 'Send email through server'.

Send Email through Server

The following must be configured for this feature to operate.

Sender Setup

Name:	The name that is appended to 'Sent' alarms.
Address:	The E-mail address appended to 'Sent' alarms.
Force TLS:	If Force TLS is 'No', and if TLS Authentication fails it will try Plain Authentication. If Force TLS is 'Yes', it will only try TLS Authentication.

Note: TLS is used for secure connections and may be required to ensure successful communication with the mail server. The DMTouch is only compatible with TLS v1.2.

Server Setup

Address:	Address of mail server used to send alarms e.g. office mail server.
Port:	Default port 25. May change depending on email server and security protocol it uses.
Authenticate:	Some servers require this to send emails.
User Name:	Enter your server account name here.
Password:	Enter your server password here.

Note 1: The DMTouch must be able to access a Mail server to send the Email. The email is sent via a third-party mail server to the destination mail server address.
Note 2: If the mail server is a URL, please ensure the name server has been completed.

Send Email Directly

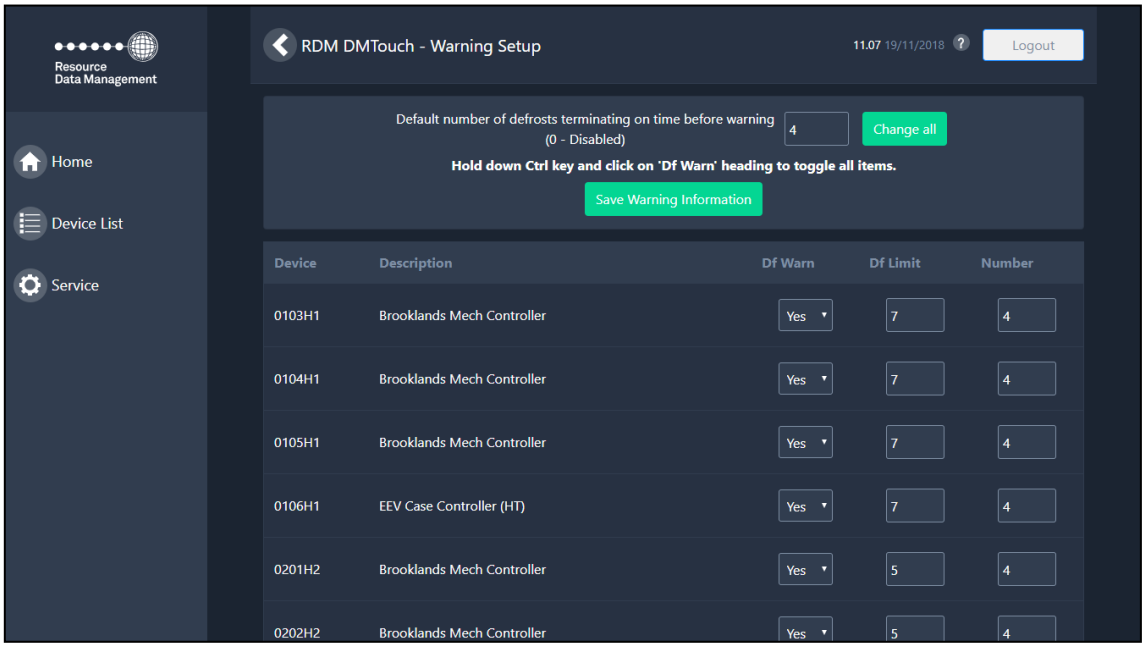
Configure the Sender Setup fields as outlined above.

This feature requires the DNS Name Server(s) to be defined in the Network Card Setup page. Port 53 (Name server) and port 25 (Mail server) must be open to allow the DMTouch to communicate. The DMTouch when using this feature sends the email directly to the destination mail server. It does this by contacting the Name Servers to obtain the IP address of the destination mail server before forwarding the email.

Warning Setup

From the Service Menu select: Alarms/ Warning Setup

Defrosts terminating on time



Once activated (PR0479), defrost warnings can be configured to alert the user of successive defrosts that have terminated on time and not on temperature. This is an energy saving feature which highlights cases that are not performing efficiently or may have a mechanical failure.

Each device has its own individual threshold for activating the warning, however entering a 'default' number and clicking 'Change All' will set all devices to this number. Or manually amend all devices separately. Save the setup by clicking 'Set Warning Information'.

Note: A setting value of '0' disables the feature (This is the factory default setting).

This alarm (Warning: Defrosts term on time) can be directed via alarm indexes and is configurable for each controller on which the feature is enabled. The default 'Warning: Defrosts term on time' index number is '6' and can be changed if required.

Defrost Limit

Defrost limit is an energy feature and is configurable on a cabinet-by-cabinet basis. It signals an alarm should the cabinet controller perform X number of defrosts in a particular day, where X is user definable. The feature observes a devices control state to determine the number of defrosts. If a cabinet has been set to perform 4 defrosts per day, then the feature would be set to 5. If the cabinet then performs 5 defrosts in a day, then an alarm is generated. The alarm index number is 6.

To enable the Limit Warnings feature, select 'Yes' from the DF Warn column next to the device.

Accept All Alarms

When used, all outstanding unacknowledged alarms are accepted by the user account that initiated the feature. This process is typically used when installing or commissioning a site and will not be required for typical day to day investigations.

Clear Alarm Log

When used, this feature deletes the current Alarm Log, resets the alarm serial numbers and removes any historical alarm information. The System alarm, 'Cleared Alarm Log' will be generated. Care should be taken when using this feature as it can't be reversed.

Send All Alarms

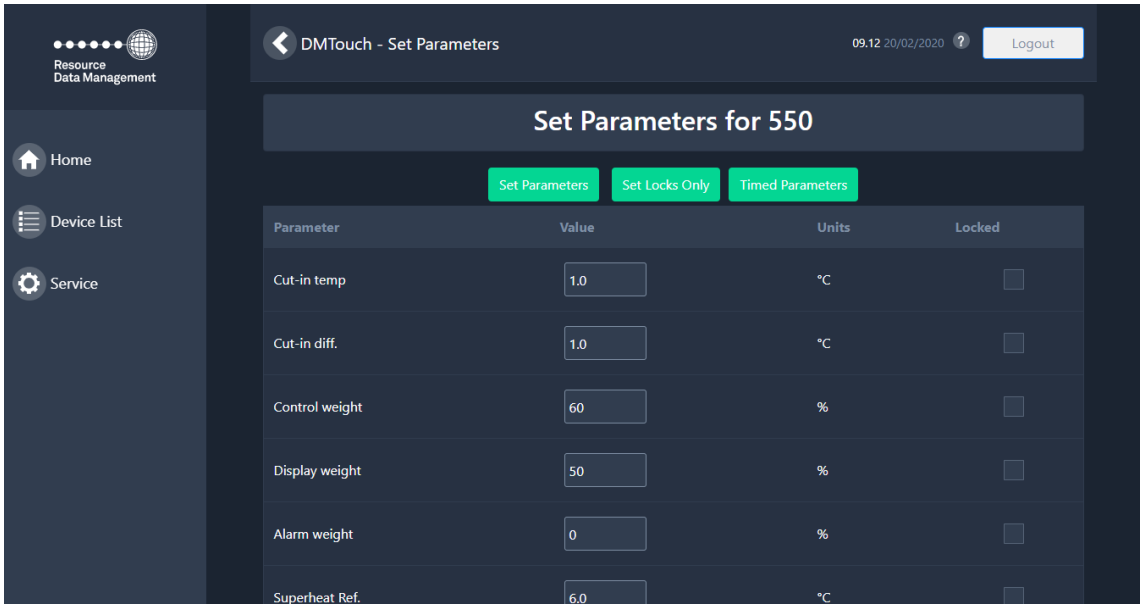
This feature has been added to allow all potential alarms from every device logged on to the DMTouch to be sent to an alarm receiver. Then, the alarm receiver is 'aware' of all possible alarms that can be sent to it and subsequent actions can be set up accordingly. Please consult RDM for more information.

Devices

Set Parameters

From the Service Menu select: Devices/ Set Parameters

From the resulting page, check the tick-box against the device(s) you wish to change parameters on and then click the 'Set Parameters' button. The screen below will be displayed. **Note**: Multiple controllers of the same type can be checked and changed together. For changing multiple controllers with different types, please see Set Shared Parameters.



Type or select the required values in the appropriate fields and click 'Set Parameters'. The parameters will be saved in the device's memory.

Locking Parameters

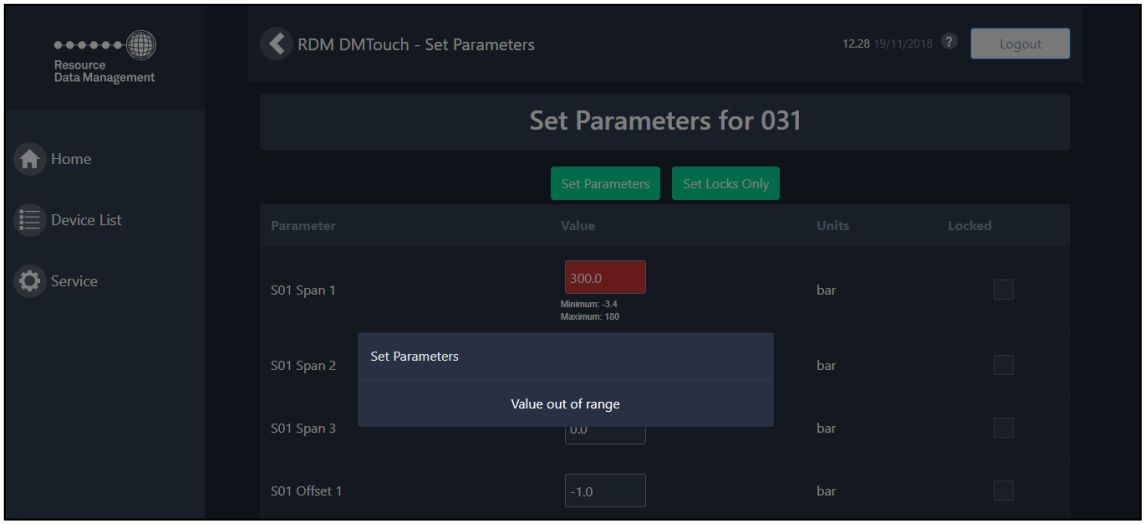
Within the Set Parameters page, the items can be 'locked', preventing changes being made at the local device's display. Changes can only then be made by an authorised user via the front panel or DMTouch webpage. Check the 'Locked' tick box against each parameter you require to lock and then press either 'Set Parameters' or 'Set Locks Only'.

The DMTouch reads and writes to its Solid-State Disk (SSD) every 30 minutes; on the hour and half past the hour, consequently it could take up to 30 minutes before any locked parameters that have been changed (locally on the device) to be restored.

Locking parameters can be useful for when replacing a device. If the parameters have been locked into the DMTouch, they can be restored to a new device on the basis it has been set to the same; type; probe type (units) and rotary switch address. Please see relevant documentation for the specific device.

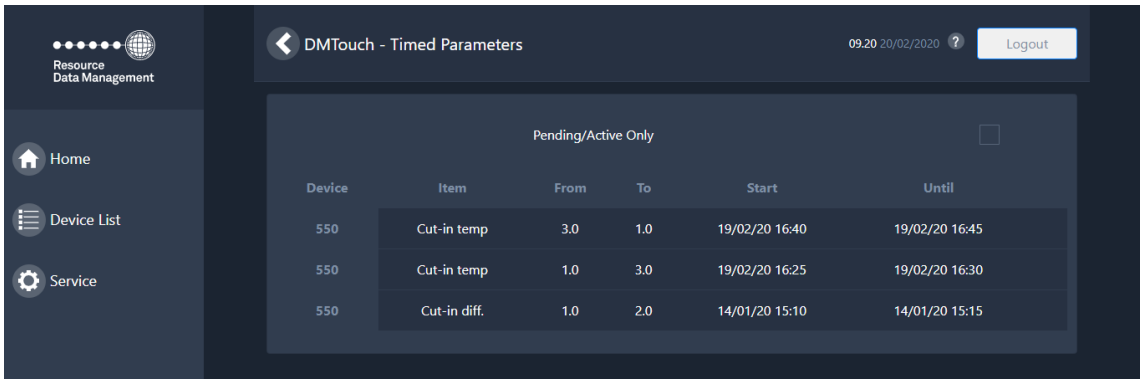
Parameter Range Checking

The DMTouch will highlight values entered into a parameter field which are out with the valid range of the device's parameters. When the user presses the 'Set Parameters' button the DMTouch will highlight any item which is out of range. Shown in the screenshot below the value '300' has been entered for the parameter 'S01 Span 1' on controller '031'. This value is not a valid number, as the parameter range is -3.4 to 180. The DMTouch highlights this error in red and shows the minimum and maximum values for the parameter. The DMTouch will not change any other parameters until a valid value has been entered for the 'problem' parameter.



Timed Parameters

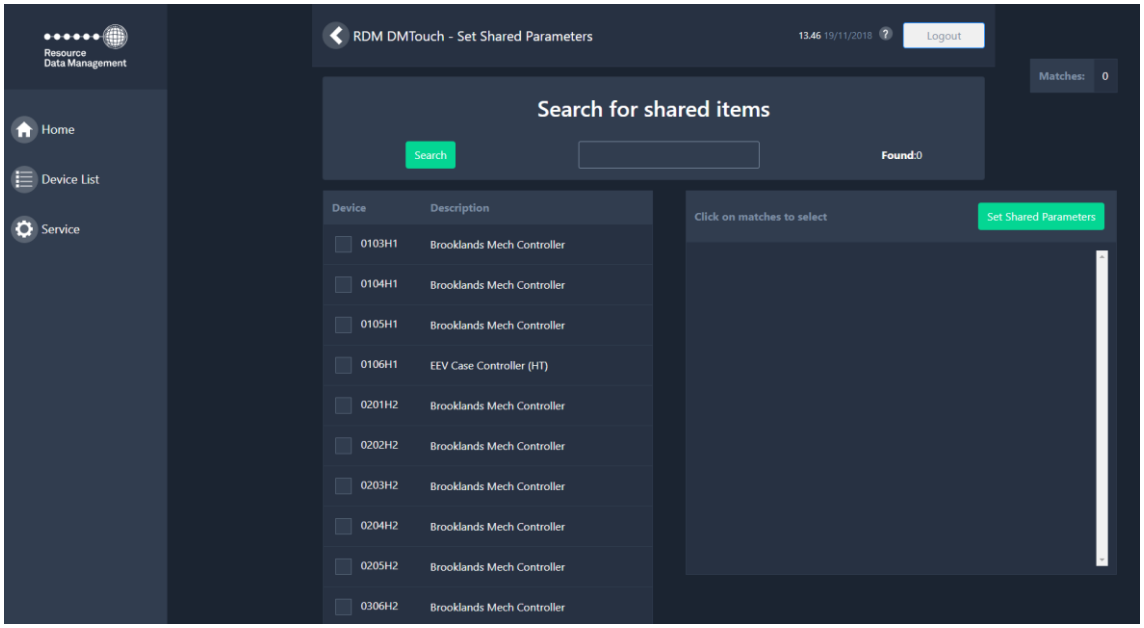
The 'Timed Parameters' button at the top of the page allows the user to view all active, pending and historic 'Timed Parameters' made from using the Web Services request to this specific device. **Note**: For further details on Web Services please contact RDM or consult the Web Services document on the RDM website.



Any pending changes will be listed with the optional 'Cancel' button next to it. All Active parameter changes will be highlighted. To only list Active/ Pending changes, check the box.

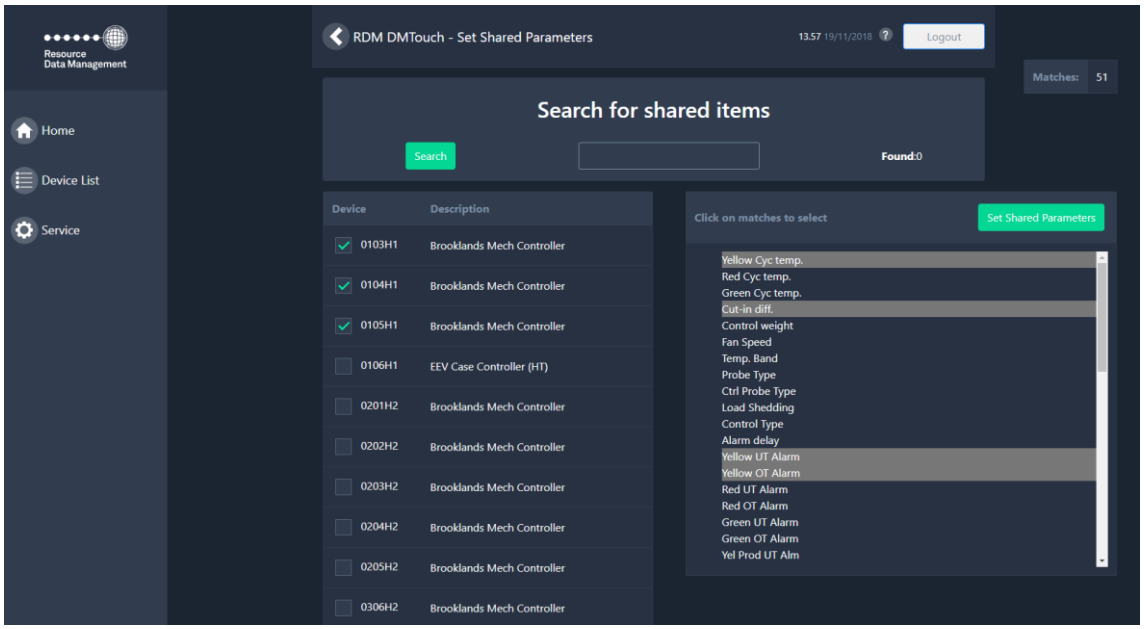
Set Shared Parameters

When there is a requirement to change parameters on multiple devices where the 'type' varies, the Set Shared Parameters feature can be used. It allows common parameters across any device type to be set. When entering the 'Set Shared Parameter' page, it will look similar to the below.

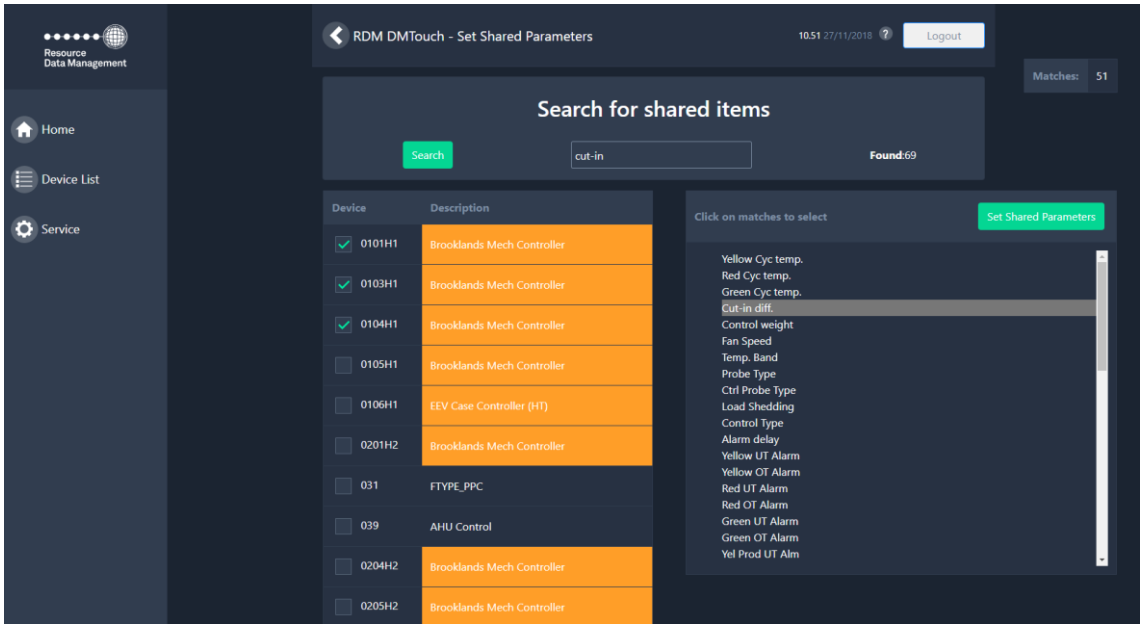


The page will list all the devices logged on to the DMTouch in the left column. There are a couple of methods to select the devices and subsequent items to be changed;

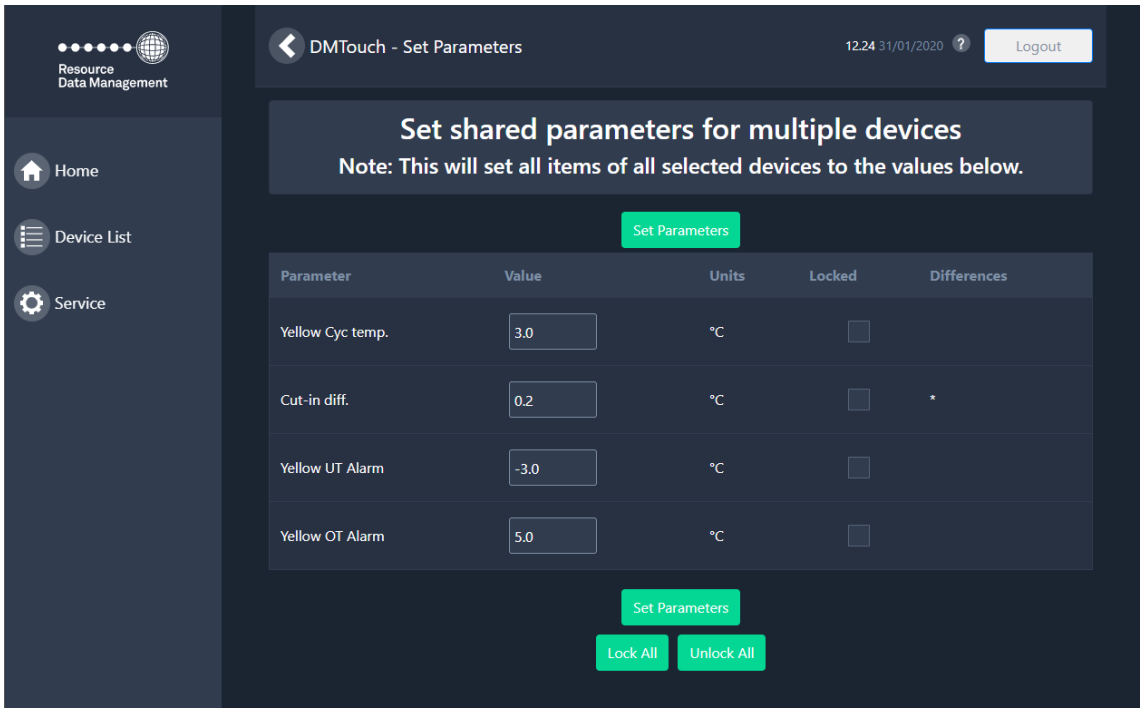
The first is to simply use the tick boxes in the left column and select the devices that require changed. While selecting them, the 'matched parameters' within the devices will be displayed on the right.



The second method is to utilise the 'search' field at the top of the page. In the field, type the parameter alias that is to be altered. For example, 'cut-in', then click 'search'. All the devices that have this parameter will be highlighted. This makes it easier to select the devices that share this common parameter. Again, select the devices to be altered using the tick boxes.



Regardless of the method to select the devices, the common 'shared' parameters are in the box on the right. Clicking on the parameter will select it to be changed.



The following page will list all the selected parameters to be changed. Make the desired changes and click on 'set parameters. This will update the selected parameters in all the previously selected devices.

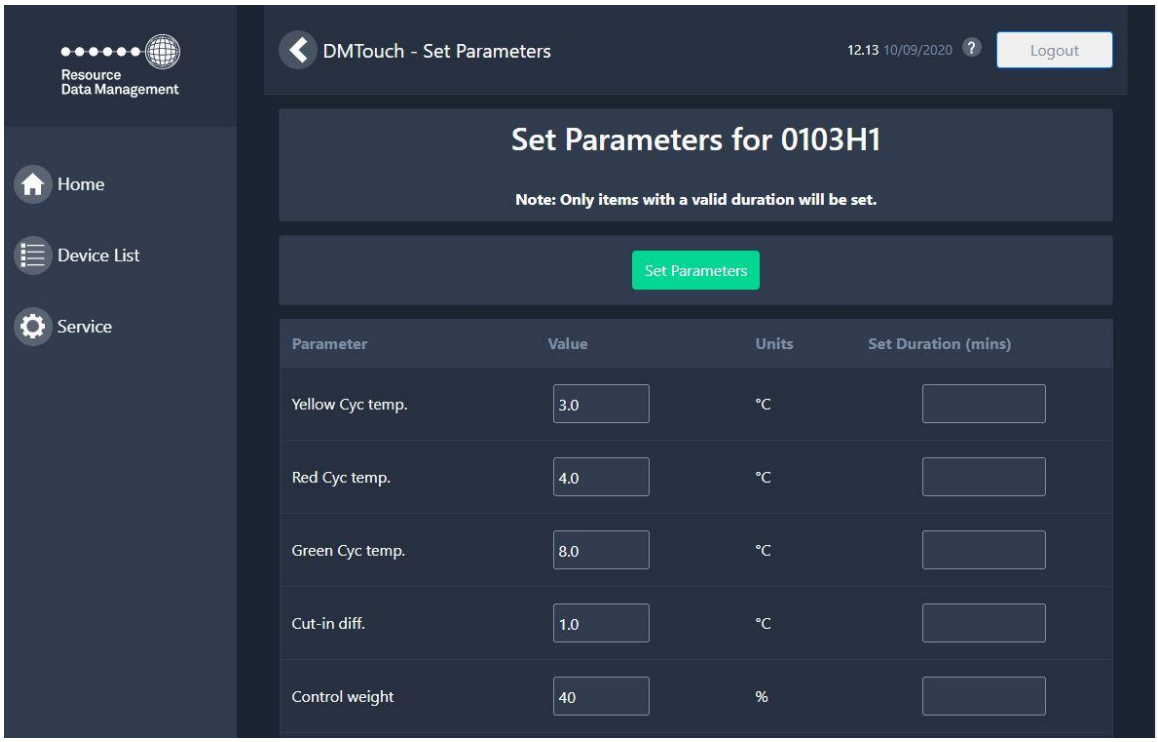
Note: The 'differences' column will indicate if the parameter varies from the previously selected devices. Where there is no asterisk confirms the 'shared parameters' are all identical.

Set Timed Parameters

From the Service Menu select: Devices/ Set Timed Parameters

This page allows parameters to be adjusted to a value for a specified duration in minutes, before then changing back to the original value that was set. Check the tick-box next to the device or devices with common parameters that are to be changed and click the 'Set Timed Parameters' button.

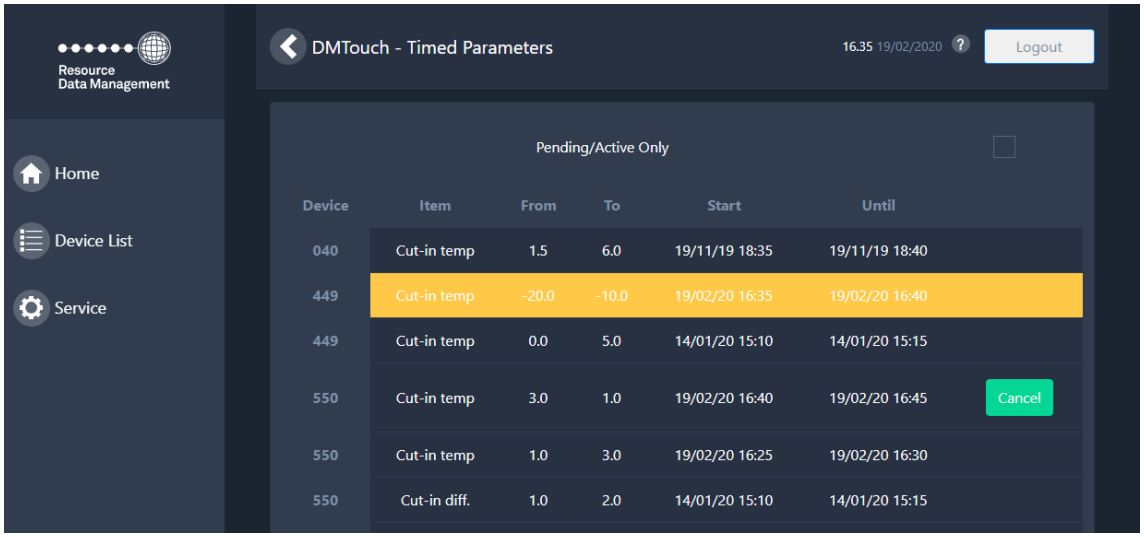
The page in the image below will be displayed. Change the 'Value' of the parameter and type in the 'Set Duration (mins)' field the number of minutes for which the parameter should be adjusted to the new value. Then click on 'Set Parameters'.



Timed Parameter Information

From the Service Menu select: Devices/ Timed Parameter Information

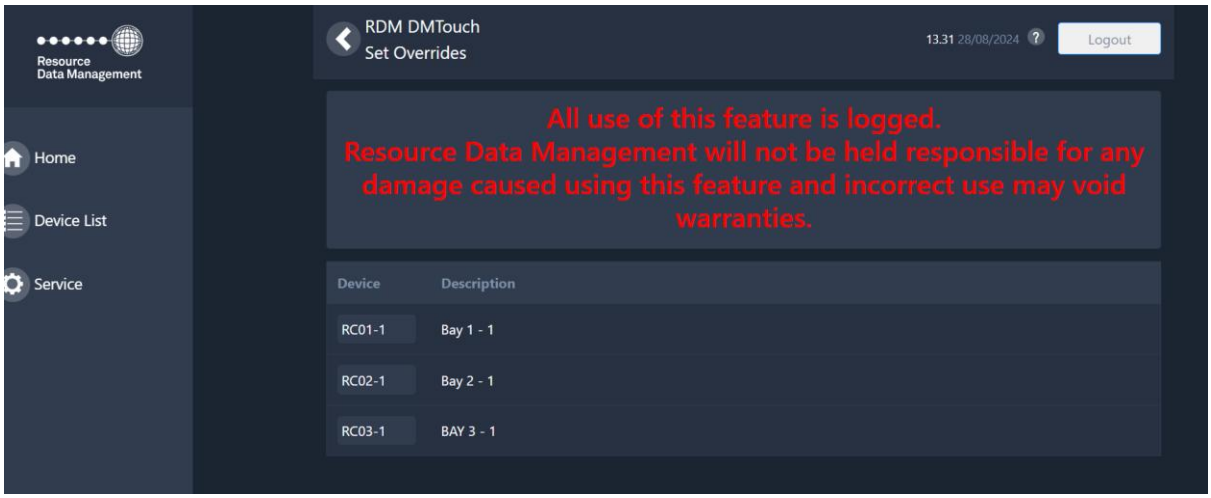
This page lists all the active, pending and historic 'Timed Parameters' made from using either the Set Timed Parameters function or the Web Services request. **Note**: For further details on Web Services please contact RDM or consult the Web Services document on the RDM website.



Any pending changes will be listed with the optional 'Cancel' button next to it. All Active parameter changes will be highlighted. To only list Active/ Pending changes, check the box.

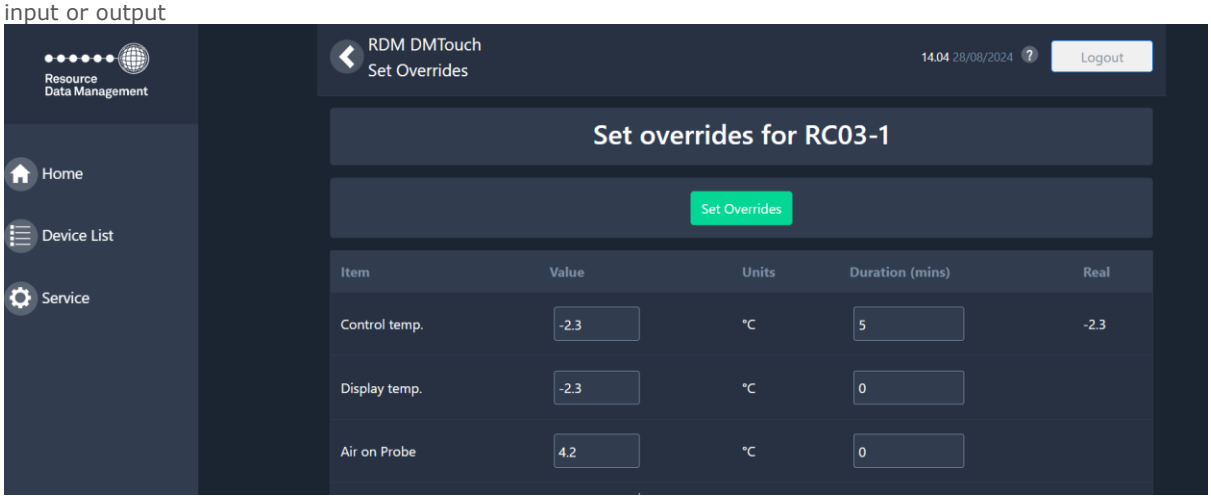
Set RDM Overrides

From the Service Menu select: Devices/Set RDM Overrides



This feature allows the user to override inputs and outputs on RDM controllers with compatible software for a specified period of time.

Any compatible devices logged on to the panel will be displayed on this page. To use the override, if you press on the device name it will take you to a list of the Inputs and Outputs (see below) on the device that can be overridden. You can then enter the value and duration (max 4320) to what you require and press the Set Overrides button. Once set the page will show the duration left over the override and the real value of the input or output



Note: This feature should only be used by individuals who are fully aware of the implications of overriding an input or output. RDM will not be held responsible for any damage or adverse effects resulting from the use of this feature.

Note: Overrides within the controller will remain active for the set duration, even if the DMTouch is restarted or the controller goes offline. However, if the controller itself is restarted, all overrides will be cancelled, and it will revert to its previous settings.

Default Parameters

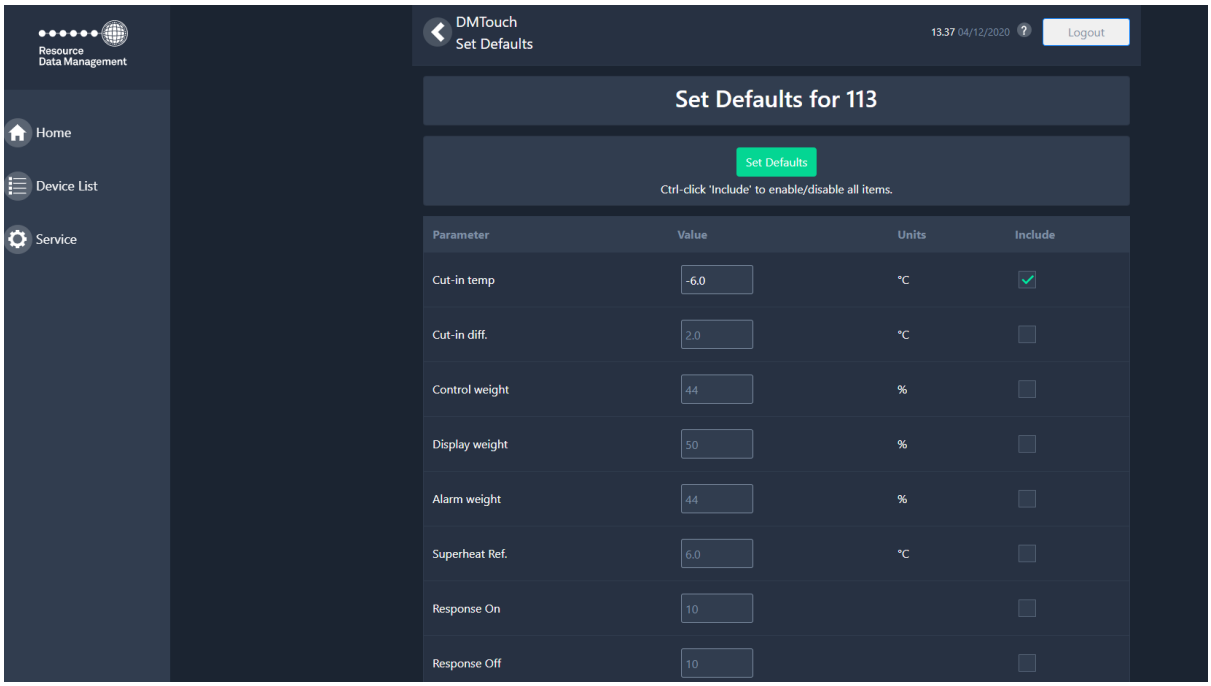
From the Service Menu select: Devices/ Default Parameters

This menu allows the function of setting default parameters on a device-by-device basis, after setting up the Show Asset section. It will allow the user to save critical control values on the DMTouch. Please note, this function is only currently available to be used by RDM controllers communicating via IP.

This can be used in the instance of a device being replaced, whereby, once the new device has been logged on and has been given the same name, it will load the default parameters that have been set for this device. In order for this feature to work correctly, it will require the two devices to be a like for like replacement.



Any device that has been set to use default parameters via the Show Asset menu, will now display a manufacturer and case type as set and give the option to set the defaults as required.



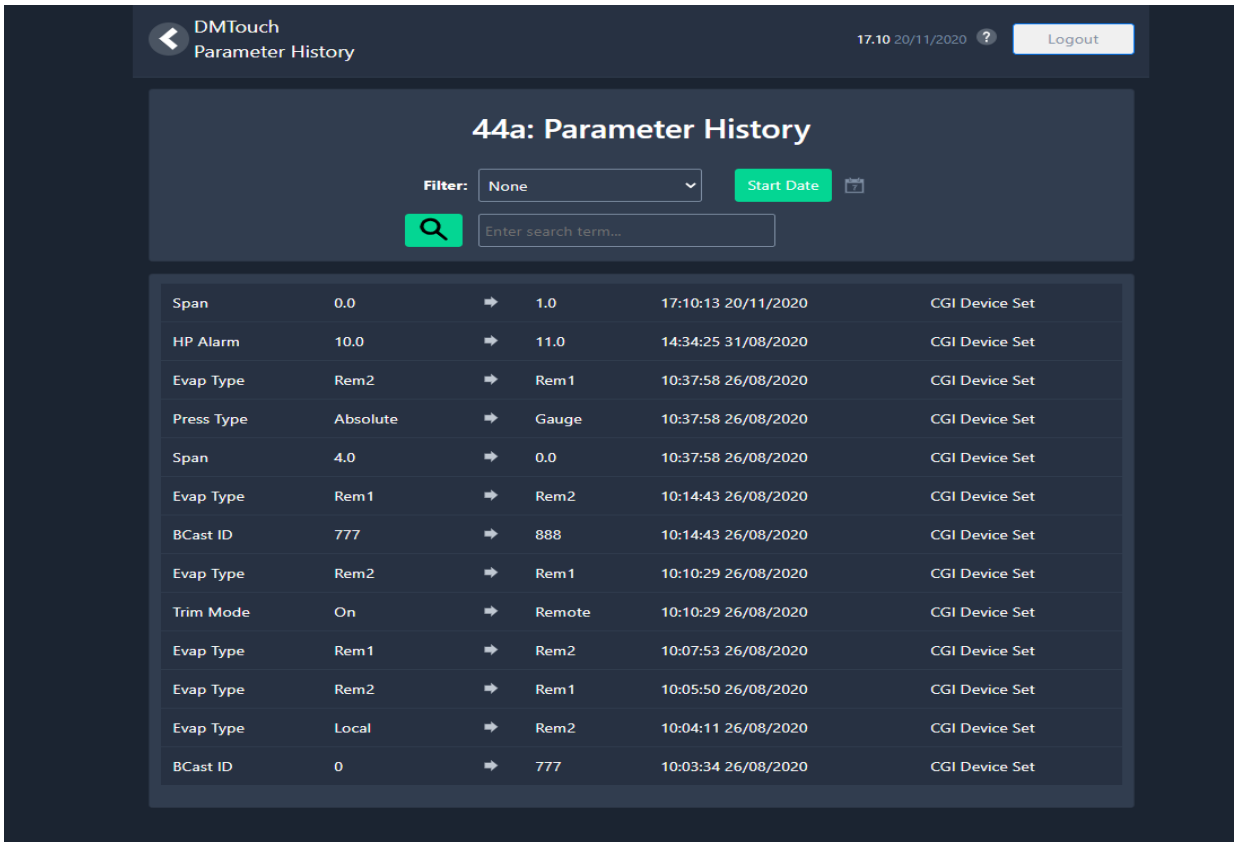
In the section above, to set a parameter as default, the "Include" checkbox should be ticked and the value can then be changed. Likewise, this should be unticked to disable All parameters can be enabled or disabled at once by holding the "Ctrl" button on the keyboard and clicking on the "Include" header. The "Set Defaults" button will then set the parameters currently in that device as well as saving these as the default parameters.

If a device set up for use with default parameters has been offline, if it comes online again with the same name and the parameters are different than those saved in the defaults, they will automatically revert to the defaults that have been set.
Any parameter that has a default enabled for it, will display with a padlock beside it when viewing the devices parameters and can only have its value changed via the default parameters menu. Please note that Probe Offset parameters are not supported.

Parameter History

From the Service Menu select: Devices/ Parameter History

This menu lists all the devices currently logged on to the DMTouch. Click on the device name to view the Parameter History of the device. This will list all the parameter changes that have occurred on this device. A specific entry can be searched for using the search bar at the top of the screen, or a specific date by using the 'Start Date' option. By using the filter drop down menu, any parameter changed via a specific method can be viewed.



Span	0.0	➡	1.0	17:10:13 20/11/2020	CGI Device Set
HP Alarm	10.0	➡	11.0	14:34:25 31/08/2020	CGI Device Set
Evap Type	Rem2	➡	Rem1	10:37:58 26/08/2020	CGI Device Set
Press Type	Absolute	➡	Gauge	10:37:58 26/08/2020	CGI Device Set
Span	4.0	➡	0.0	10:37:58 26/08/2020	CGI Device Set
Evap Type	Rem1	➡	Rem2	10:14:43 26/08/2020	CGI Device Set
BCast ID	777	➡	888	10:14:43 26/08/2020	CGI Device Set
Evap Type	Rem2	➡	Rem1	10:10:29 26/08/2020	CGI Device Set
Trim Mode	On	➡	Remote	10:10:29 26/08/2020	CGI Device Set
Evap Type	Rem1	➡	Rem2	10:07:53 26/08/2020	CGI Device Set
Evap Type	Rem2	➡	Rem1	10:05:50 26/08/2020	CGI Device Set
Evap Type	Local	➡	Rem2	10:04:11 26/08/2020	CGI Device Set
BCast ID	0	➡	777	10:03:34 26/08/2020	CGI Device Set

Aliases

From the Service Menu select: Devices/ Aliases

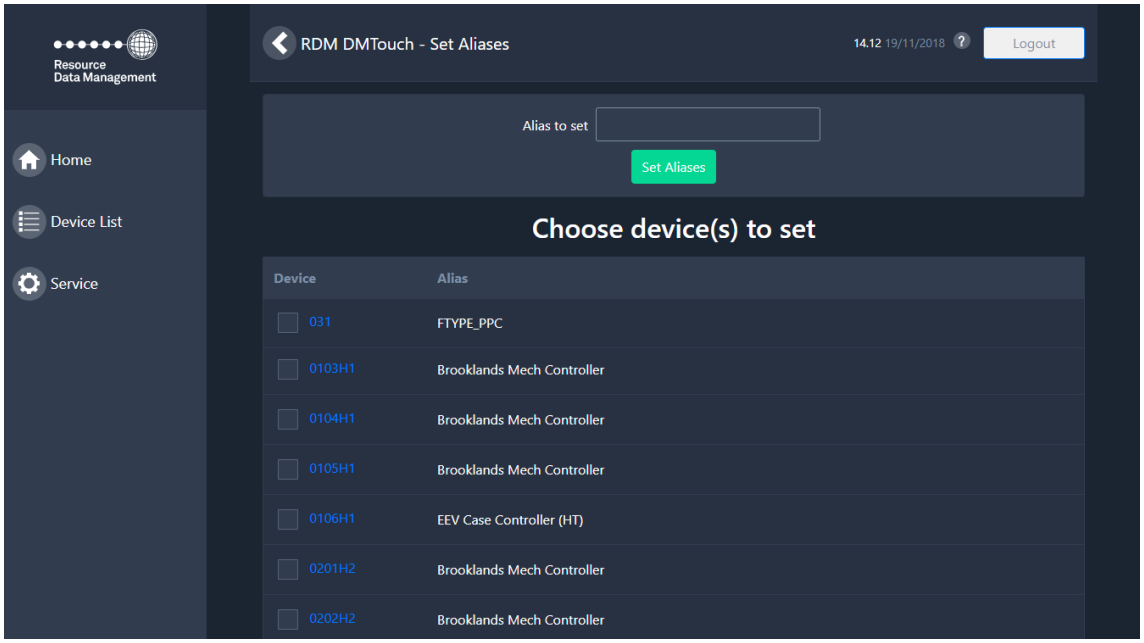
Sub menus will then be shown as:

Names	Allows for the device name and/or description to be changed.
Alarms	Allows for alarm messages to be changed.
Items	Allows for individual device item names to be changed.
Visibility	Allows the user to hide inputs, outputs or parameters completely for a given device or make them viewable to authorised users only e.g. Site, Service or Install level.
Set Shared Visibility	Allows the user to set the visibility of items across multiple devices with different types.
Item Matching	Allows the user to customise which 'tags' are used by the DMTouch to display certain information. E.g. Control values listed within the device list.

Names - Changing a Device Name

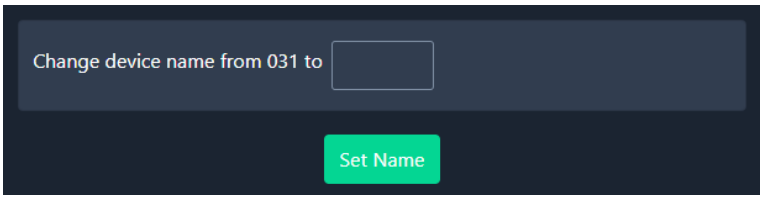
From the Service Menu select: Devices/ Aliases/ Names

The below page shows an example of the page displayed. Devices that allow a name change will be displayed as a hyperlink, for example see 031 on the below screen capture. Certain network types have fixed device names which can't be changed, for example, devices logged on to the DMTouch using the Genus protocol.



Click on this hyperlink to change the device name.

This screen will be displayed:



Enter a suitable Device name in the displayed field provided and then click 'Set Name'.

A maximum of 6 characters can be entered for a device name. Care should be taken when defining groups of devices as carefully selected names will allow the use of 'Wild Card' feature in a GP Timer channel or the implementation of a multiple cabinet defrost strategy using a Defrost Timer channel. Avoid the use of control characters such as &, %, * etc. as well as blank spaces.

To revert a device to its original name (e.g rotary switch), type it in the field.

Names – Changing Device Descriptions

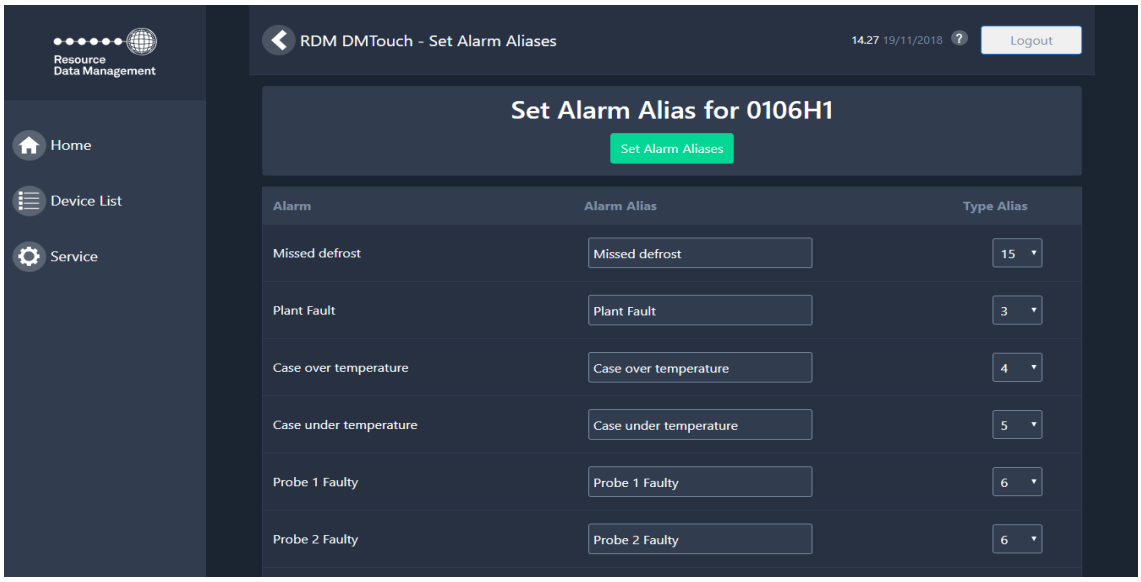
While on the Name Alias screen, check the tick-box(s) of the device(s) you wish to alias and type in the alias name you want in the 'Alias to set' field. Then click the 'Set Aliases' button. The Aliases will be changed. Up to 32 characters can be used, and multiple devices can be changed together.

Note: - If a tab space is entered into the alias name, it could have an adverse effect on some pages displaying on the DMTouch.

Alarm - Alias

From the Service Menu select: Devices/ Aliases/ Alarms

On the initial page, tick the check-box of the device whose alarm aliases is to be set, then click 'Set Aliases'. This will result in the below screen.



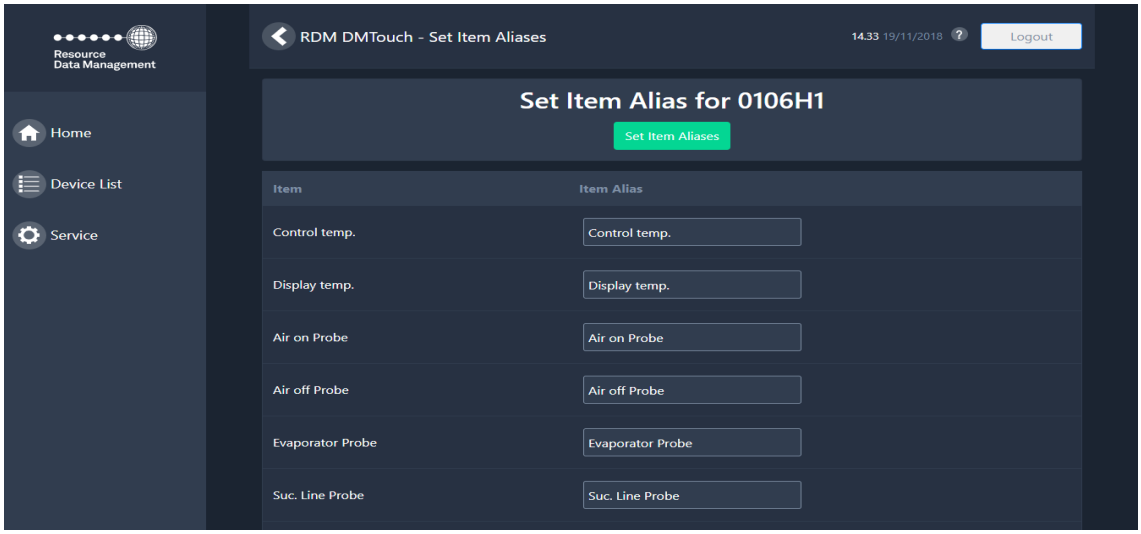
The new alarm alias can now be typed into the field(s) using up to 32 characters. To change the alarm type from the device default, select the new type from the drop-down box in the 'Type Alias' column. The purpose of the 'Type Alias' is to allow a user to separate common alarms, for example, Probe Faults. By doing this, different actions can be assigned depending on the particular probe that fails.

Click 'Set Alarm Aliases' to implement any change(s) made – the DMTouch will confirm the operation and revert back to the previous screen listing the devices.

Item -Alias

From the Service Menu select: Devices/ Aliases/ Items

On the initial page, tick the check-box of the device whose item aliases is to be set, then click 'Set Aliases'. This will result in the screen similar to below.



Type the new item name (up to 31 characters) in the relevant field and then click 'Set Item Aliases' to complete the operation. The DMTouch will indicate the operation and revert back to the previous screen.

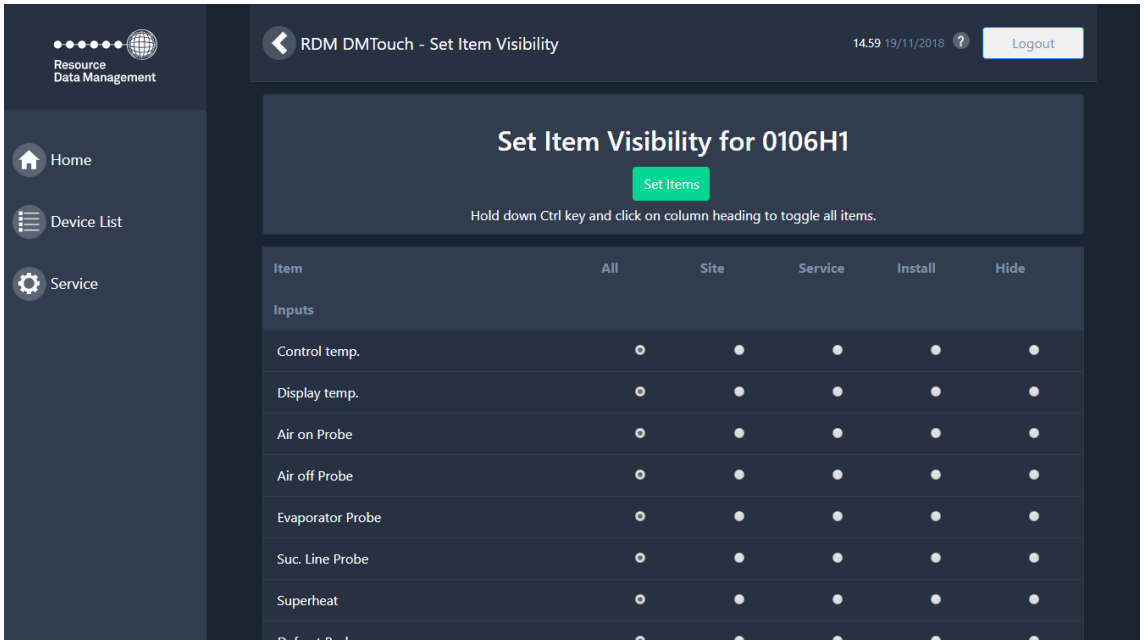
Alias Inheritance

On some RDM devices, aliases can be altered from within their own User Interface, for example the Superpack. With DMT V2.5 and above, logging these devices on will inherit the set aliases from within the controller. **Note**: Subsequent amendments to aliases from the DMTouch User Interface will override the names inherited. Additionally, these changes will not filter down to the device logged on.

Visibility

From the Service Menu select: Devices/ Aliases/ Visibility

On the initial page, tick the check-box of the device(s) whose items' visibility is to be set, then click 'Visible Items'. Multiples of devices with the same type can be selected and set together. This will result in a screen similar to below.



Shown above is the list of inputs, outputs and parameters for a case controller. Configure the items required and click 'Set Items' to save the changes.

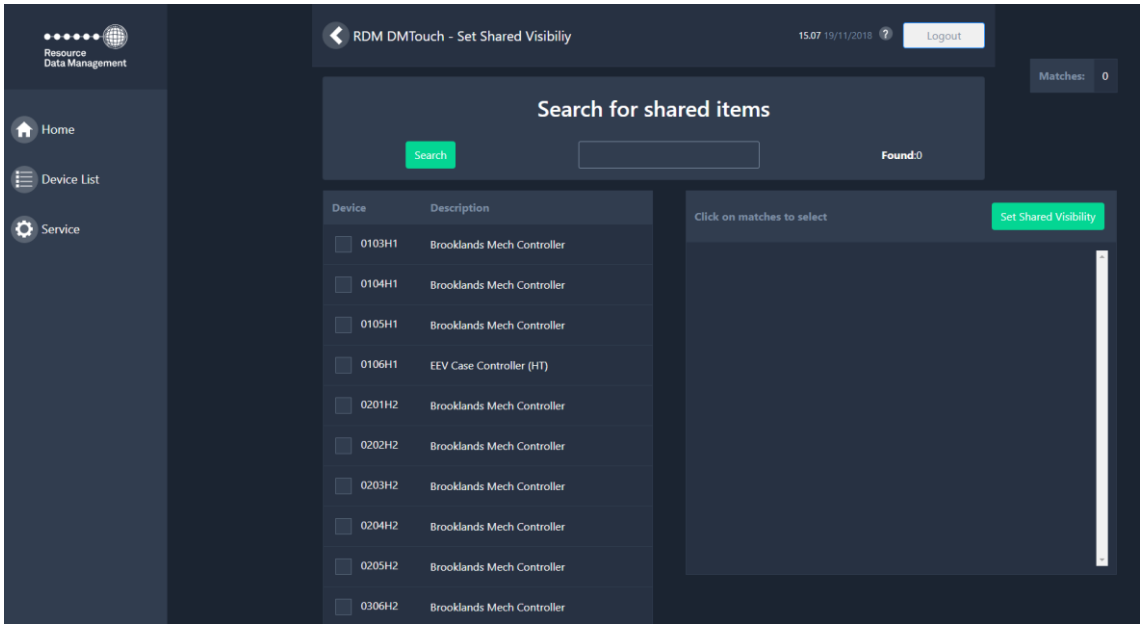
All	Selected items are viewable all of the time.
Site	Selected items are viewable only when the user is logged in at Site level or above.
Service	Selected items are viewable only when the user is logged in at Service level or above.
Install	Selected items are viewable only when the user is logged in at Install level.
Hide	Selected items are hidden from the user completely and are not viewable.

Note: Where Intuitive Super Packs, Circuits and Intuitive Plant TDBs have been logged on to the DMTouch, the visibility (if set) will be inherited from the device itself. However, setting visibility from the DMTouch will not be inherited by the devices. Please see the respective device documentation for compatibility.

Set Shared Visibility

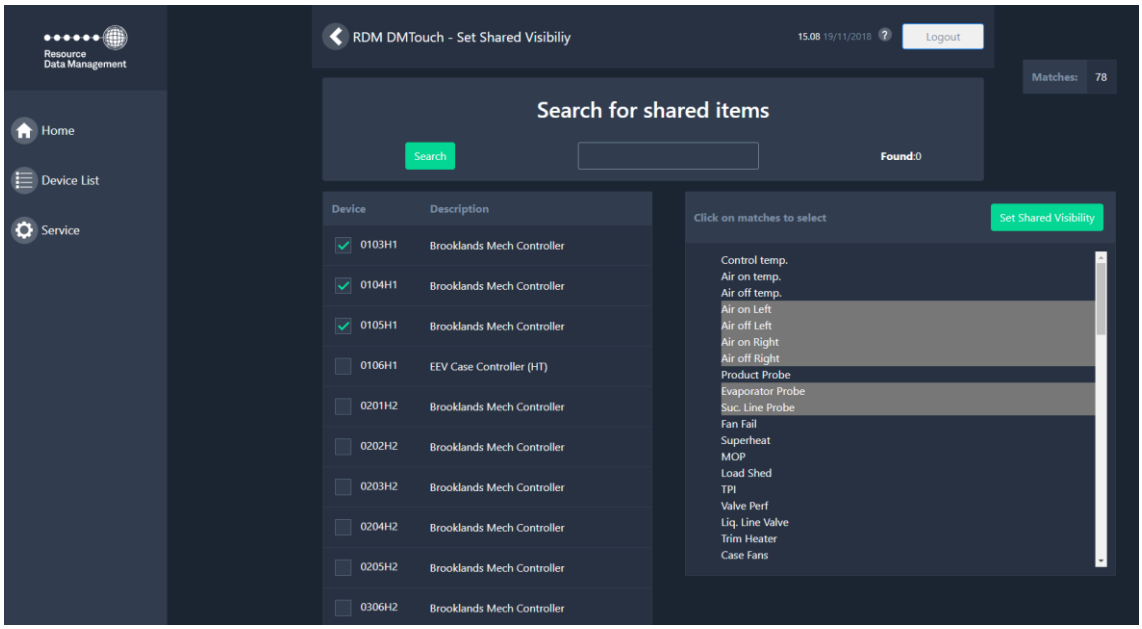
From the Service Menu select: Devices/ Aliases/ Set Shared Visibility

When there is a requirement to change the visibility of items across multiple devices with different types, the Set Shared Visibility feature can be used. It allows common items across any device type to have their visibility changed. The page will look similar to the below.

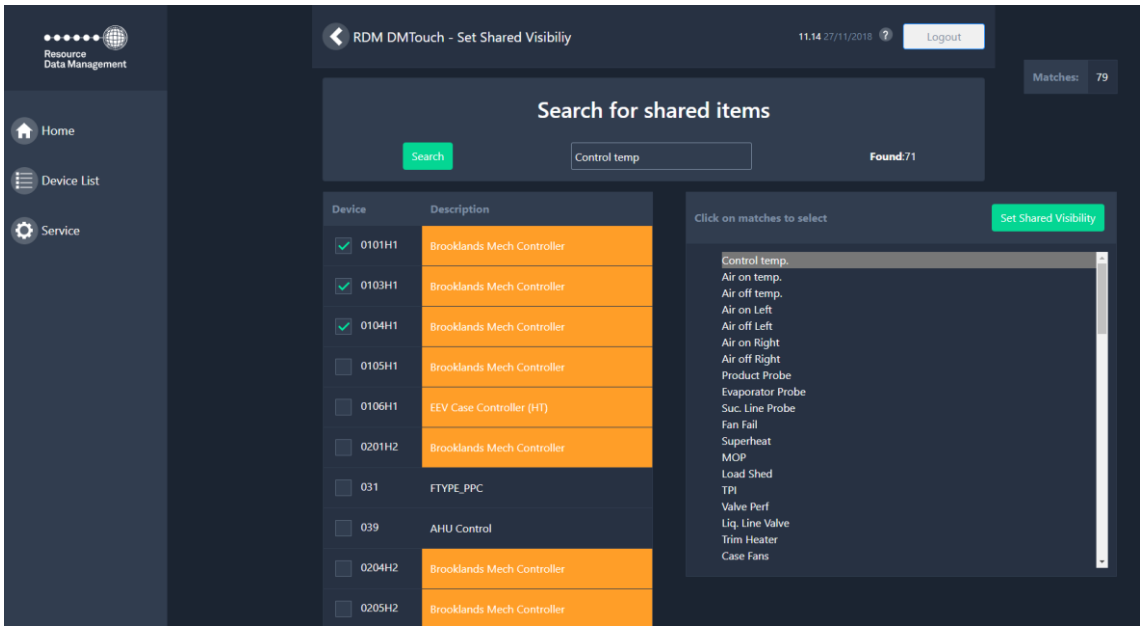


The page will list all the devices logged on to the DMTouch in the left column. There are a couple of methods to select the devices and subsequent items to be changed;

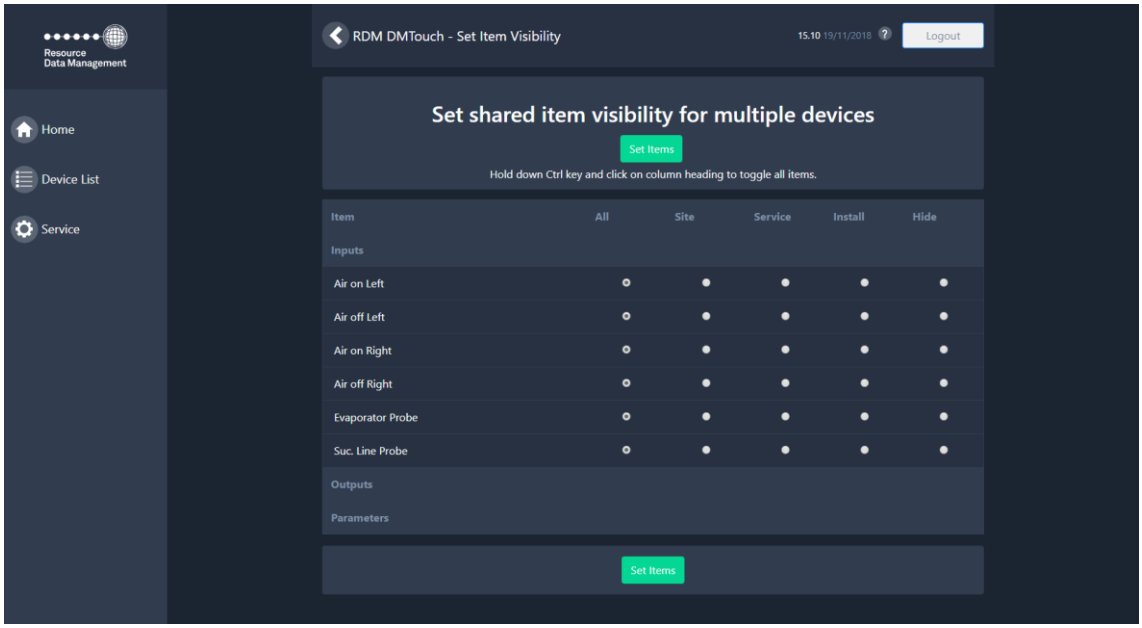
The first is to simply use the tick boxes in the left column and select the devices that require changed. While selecting them, the 'matched items' within the devices will be displayed on the right. The 'Matches' field, displayed at the top right of the screen, will give the total number of 'common items'.



The second method is to utilise the 'search' field at the top of the page. In the field, type the item alias that is to be altered. For example, 'Control temp.', then click 'search'. All the devices that have this item will be highlighted. This makes it easier to select the devices that share this common item. Again, select the devices to be altered using the tick boxes.



Regardless of the method to select the devices, the common 'shared items' are in the box on the right. Clicking on the items will select them to be changed. Once all items are selected (to be changed), click on 'Set Shared Visibility', this will result in the screen similar to below.



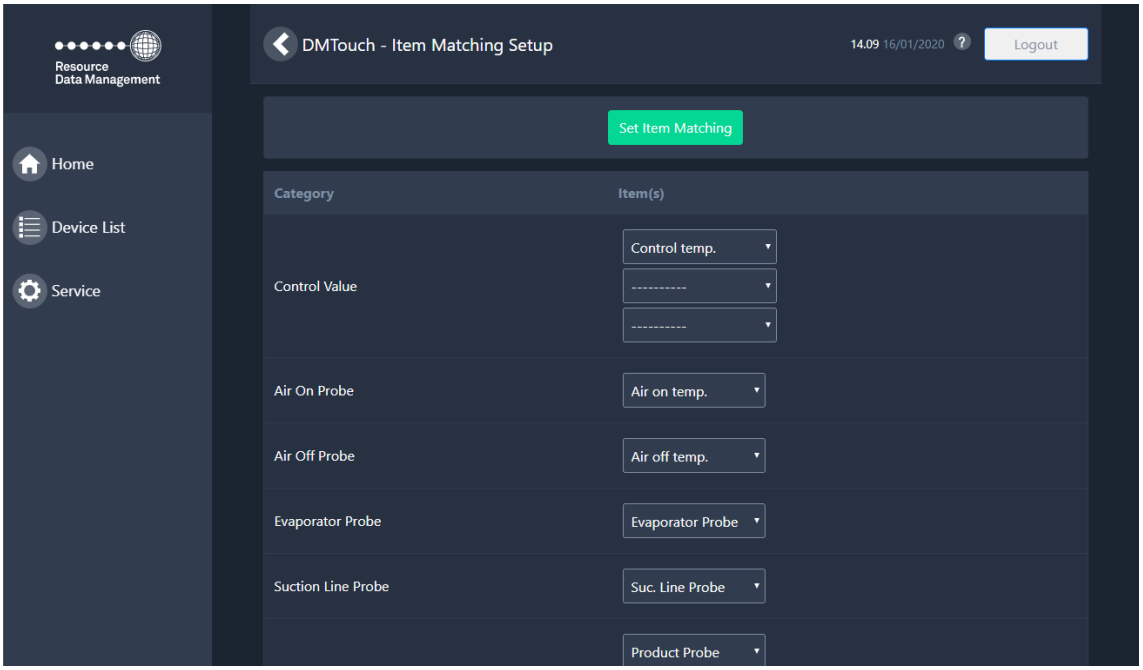
The page that follows will list all the selected items. Select the appropriate visibility levels for each of the items and click on 'Set Items'. This will update the selected items in all the previously selected devices.

Item Matching

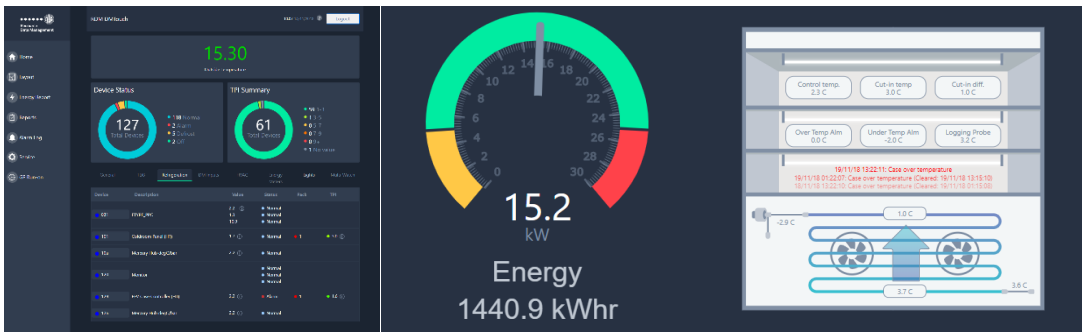
From the service menu, select: Devices/ Aliases/ Item Matching

This feature allows the user to customise which 'tags' are used by the DMTouch to display certain information. For example, select which input should be visible in the 'Control Value' column in the device list or appear within the mimics. From the list of devices (within the item matching page), select which one is to be set and click 'Set Item Matching'. **Note**: multiple devices that share the same 'type file' can be set together.

This will then take you to the 'Item Matching Setup' page. From here, select which items should be matched to the category then click on 'Set Item matching'.



When matched, the DMTouch will use them and display them accordingly, for example, in the device list or mimics.

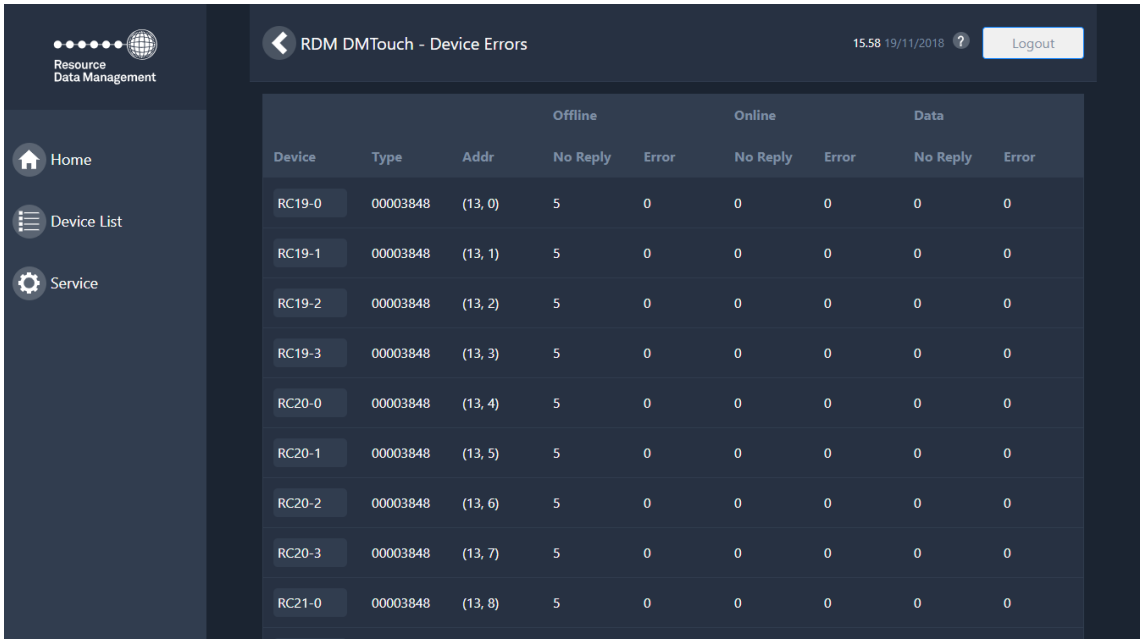


Please ensure all power is switched off before installing or maintaining this product.

Network

Network Errors

From the Service Menu select: Devices/ Network/ Network Errors



			Offline		Online		Data	
Device	Type	Addr	No Reply	Error	No Reply	Error	No Reply	Error
RC19-0	00003848	(13, 0)	5	0	0	0	0	0
RC19-1	00003848	(13, 1)	5	0	0	0	0	0
RC19-2	00003848	(13, 2)	5	0	0	0	0	0
RC19-3	00003848	(13, 3)	5	0	0	0	0	0
RC20-0	00003848	(13, 4)	5	0	0	0	0	0
RC20-1	00003848	(13, 5)	5	0	0	0	0	0
RC20-2	00003848	(13, 6)	5	0	0	0	0	0
RC20-3	00003848	(13, 7)	5	0	0	0	0	0
RC21-0	00003848	(13, 8)	5	0	0	0	0	0

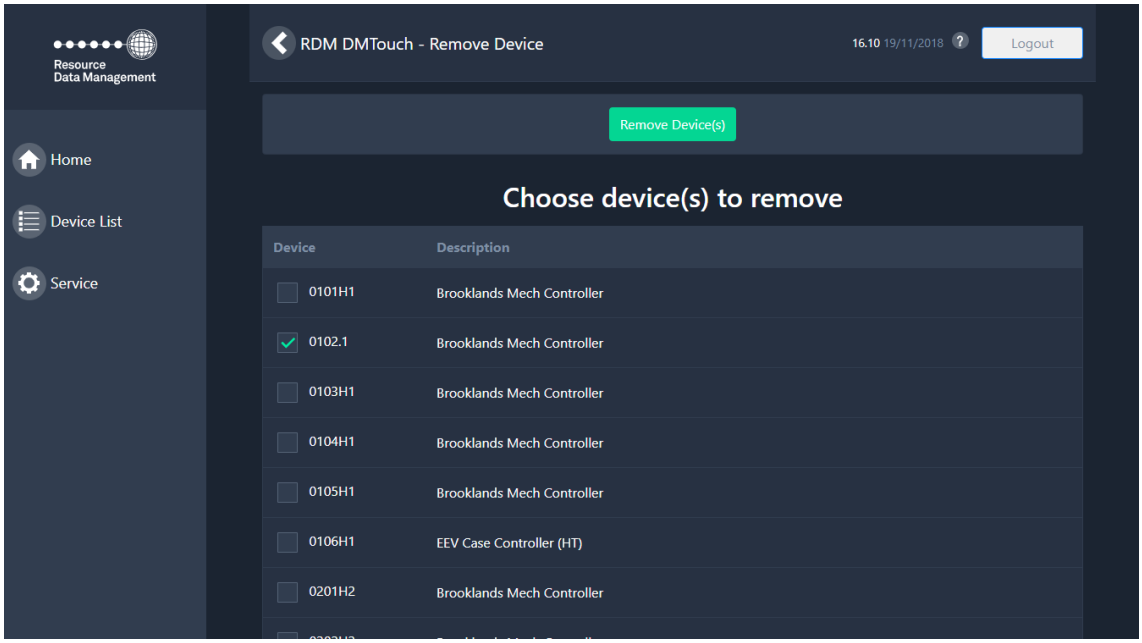
There are three categories of Network Errors reported; **Offline, Online** and **Data.**

Each of the categories has 'No Reply' errors and 'Errors' reported. The errors reported are an accumulation of the errors since the last power-on or reset of the DMTouch. The network errors page gives an indication to the health of a given network. If for example there are 6 controllers connected to an RS485 network and all six have a high number of data no reply error's then this may indicate an issue with the network. Firstly, check the Belden cable connections are secure, no cables have been damaged and so forth. Now clear the network errors and check to see if the network errors are still being generated. Please note that Offline and Online errors relate to RS485 and RDM wireless mesh controllers only. Data errors are shown for IP, RS485 and RDM Bluetooth wireless mesh controllers. The Device Type file and network address are also shown for each device.

Note: From DMTouch V3.1.0 and above hidden controllers will also be listed.

Remove Device

From the Service Menu select: Devices/ Network/ Remove Device

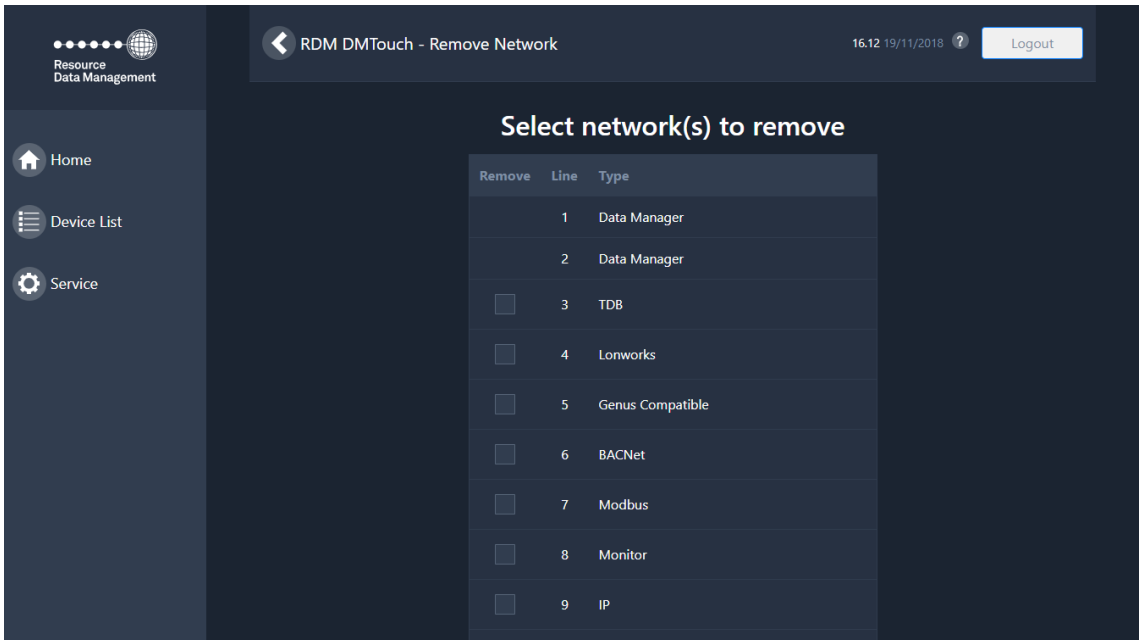


Check the tick-box of the device(s) you wish to remove and click the 'Remove device(s)' button.

Note: If an RS485 device is removed from the device list by mistake then it needs to have its network setting purged (CLRA) and re-registered to get it back online. If an IP (using DHCP) device is removed from the device list by mistake then it will come back online without any operator intervention.

Remove Network

From the Service Menu select: Devices/ Network/ Remove Network

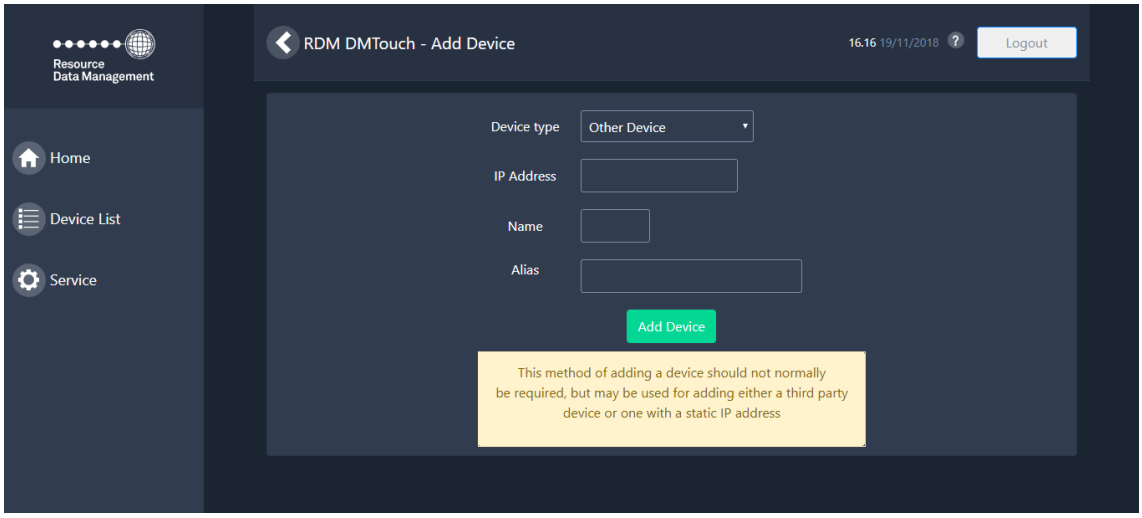


An entire network line can be removed rather than removing all the controllers on that network line individually. Check the tick-box of the network(s) you wish to remove and click the 'Remove' button.

Note: **Extreme** caution should be exercised when using this feature.

Add Device

From the Service Manu select: Devices/ Network/ Add Device



Use this menu to add devices that cannot handle DHCP addressing. (Not necessary for RDM controllers, unless used in IP-L mode).

From the drop-down menu select a 'Device type'. Examples include; Other, SNMP, CBISS, Modbus USB. Depending on the 'Device type' selected the other fields necessary to add the device will be displayed.

Some specific devices have their own documentation for being added to a DMTouch, please visit the RDM website (www.resourcedm.com) for more details.

Below is an example for adding an RDM IP device, using the static addressing method.

- Select 'Other Device'.
- Type in the IP address of the device, such as10.1.2.55. **Note**: when the DMTouch uses DHCP, it hands out addresses between 10.1.2.80 – 10.1.2.249 (as default). RDM recommend using the range 10.1.2.2 - 10.1.2.79. Nevertheless, you should confirm within the Device Information page to check the address you intend to use has not previously been allocated.
- Type in the controller's name (up to 6 characters only) such as 'MERC-3'.
- Type in the alias such as 'Mercury Case Controller'.
- Click the 'Add Device' button to execute the command.

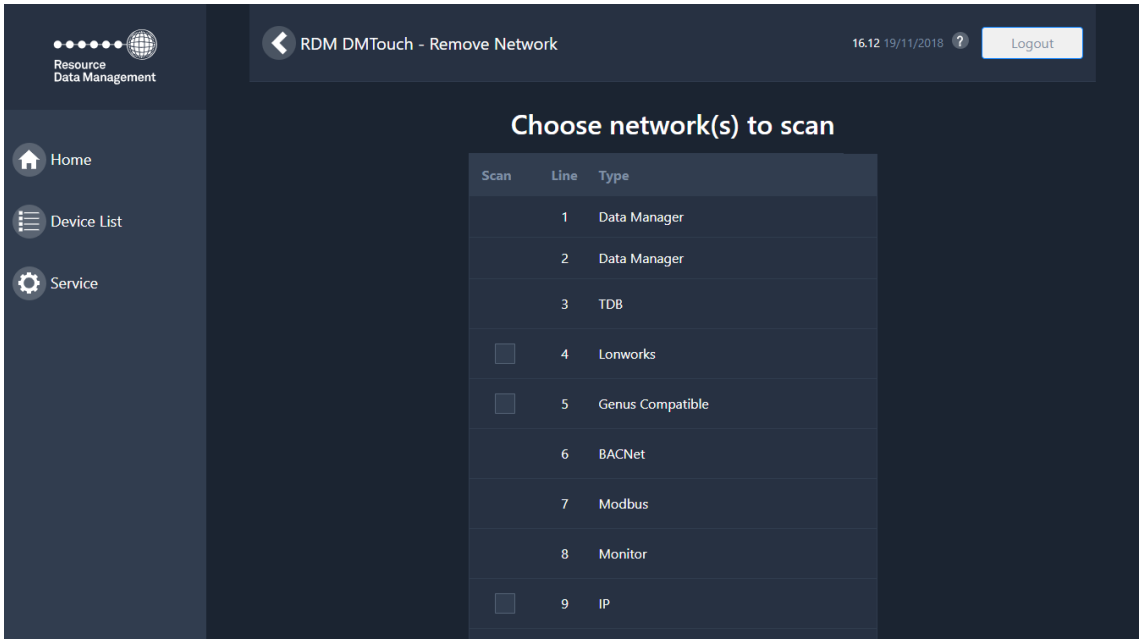
Note: please check the DMTouch System Config to ensure the appropriate network interface is enabled for the devices you wish to manually add. For example, to logon Modbus® devices the Modbus® interface must be enabled.

Automatically Logging-on Devices

RDM's equipment is based around the IP communication network using self-descriptive XML. This allows our devices to communicate at high speeds and log on to our networks automatically. For explanations of logging on the controllers please see the separate documentation listed on our web pages.

Network Scan

From the Service Menu select: Devices/ Network/ Network Scan



Check the tick-box on the network line you want to scan and then click the start button. The scan will start and then after a period of time (varies according to number of devices on the network) will conclude with compatible devices found put online.

Use this feature with extreme caution as it could return with some already online devices not being found. Please do not use this option unless you understand the effect it will have or have been asked to use it by RDM Technical Support. You may cause severe network problems otherwise.

Network scan feature supports, IP, LONworks® and Genus® networks. Network scan can be used to scan an IP network and bring on a number of devices which have been assigned static IP addresses. **Note**: Some Genus® compatible devices do not support this feature and may drop offline.

RS485 Adapters

From the Service Menu select: Devices/ Network/ RS485 Adapters

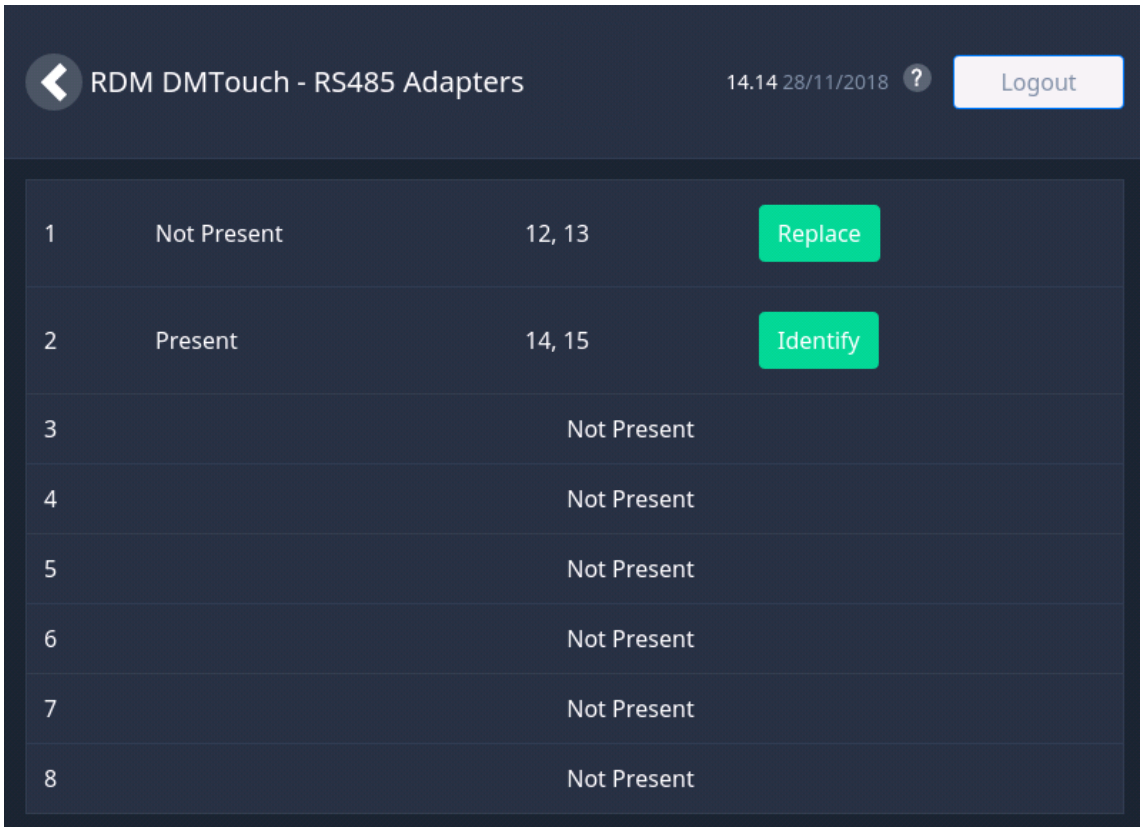
The RS485 Adapters menu is only accessible from the DMTouch screen.

The menu allows the user to view attached RS485 Genus adapters and which network line they are associated to. When an RS485 dongle is connected to the system, it creates two new network lines and allows genus devices to be logged on to them. When the user navigates to the Device Info page the details on devices and their networks are shown.

The RS485 Adapters page will show whether the network line is present, the two associated network numbers and an 'Identify' button (example below). If the user presses the 'Identify' button, the two network LEDs on the selected dongle, will flash for a short period.

This page is also used to replace an adapter. Using the example below, there is a dongle (not present) associated with current network lines 12 & 13. A second dongle has been plugged in and created two new lines (14 & 15 temporarily). Using the 'Replace' button it will list all 'unused' adapters and confirm which free adapter to use. This will result in the new adapter replacing the original two network lines.

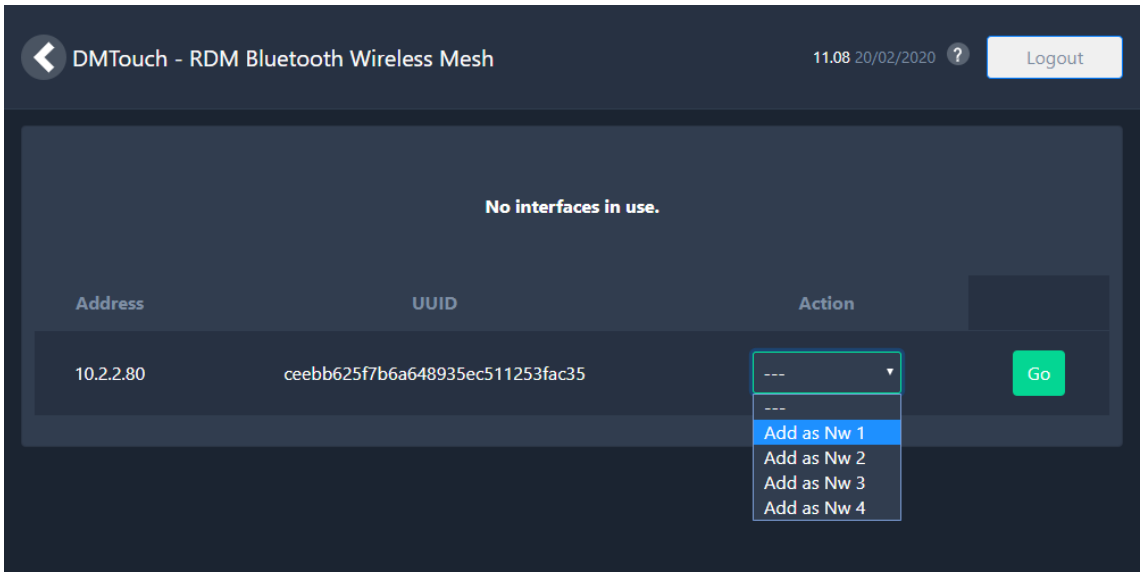
When the user enters the page, it will show a similar screen to the below.



RDM Bluetooth Wireless Mesh

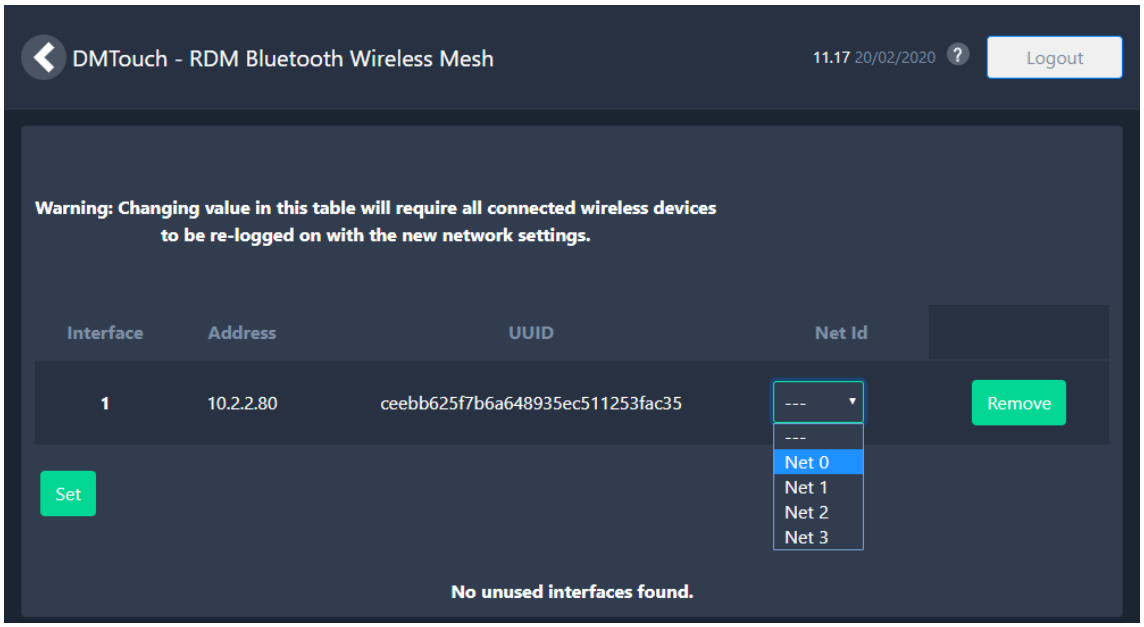
From the Service Menu select: Devices/ Network/ RDM Bluetooth Wireless Mesh

The following guide should be used to configure an RDM Bluetooth Mesh Base unit for use with a DMTouch. Up to 4 Bluetooth mesh base units can be connected to the DMTouch's Ethernet 0 network. This is advantageous should the wireless network be split across multiple floors in a building.



Shown above is an example screenshot from the DMTouch's 'Bluetooth Setup' page. It shows no current interfaces in use and a single Bluetooth mesh base unit that has not yet been configured. As mentioned above up to 4 Bluetooth Mesh networks can operate simultaneously. The first step is to set the base unit's Network number from the 'Action' drop down menu and click 'Go'.

Once the unit has been added as a network it will list it in the below table.



From here, select the desired Net ID (0 – 3) from the drop-down menu.

Note: Any Bluetooth mesh device to be logged on to the DMTouch via this base unit must have its network channel switch set to the same Net ID selected for the base unit.

Press 'Set' to save any changes made.

Now configure the wireless mesh device that is to be logged on to the DMTouch.

Note: The software feature 'DMTouch Bluetooth Mesh Software Enabler' (PR0635) will allow 32 devices to be logged on to the DMTouch. This can be over a single Access point or multiple Access points.

For more information on configuration of the Bluetooth Wireless Mesh devices, please consult its respective user documentation found on the RDM website.

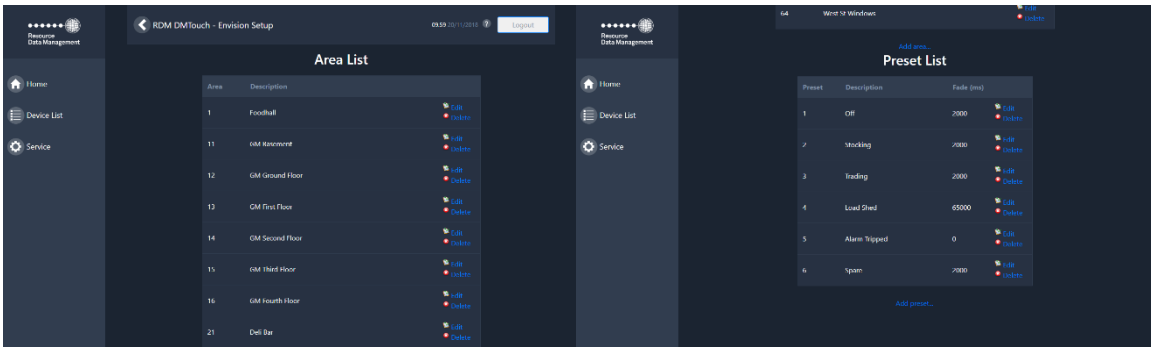
Philips Envision Setup

From Service Menu, select: Devices/ Network/ Philips Envision Setup

Following the DMTouch feature for controlling Philips Envision Lighting panels being enabled, areas and pre-sets can be configured from this menu (please consult RDM technical support for details). **Note:** Prior knowledge of the Philips system is required to configure the setup. Within the Lighting system, different areas must already be configured from 1 -99 along with pre-sets 1-x. These predefined areas/ pre-sets can be added to match and then aliased within this page.

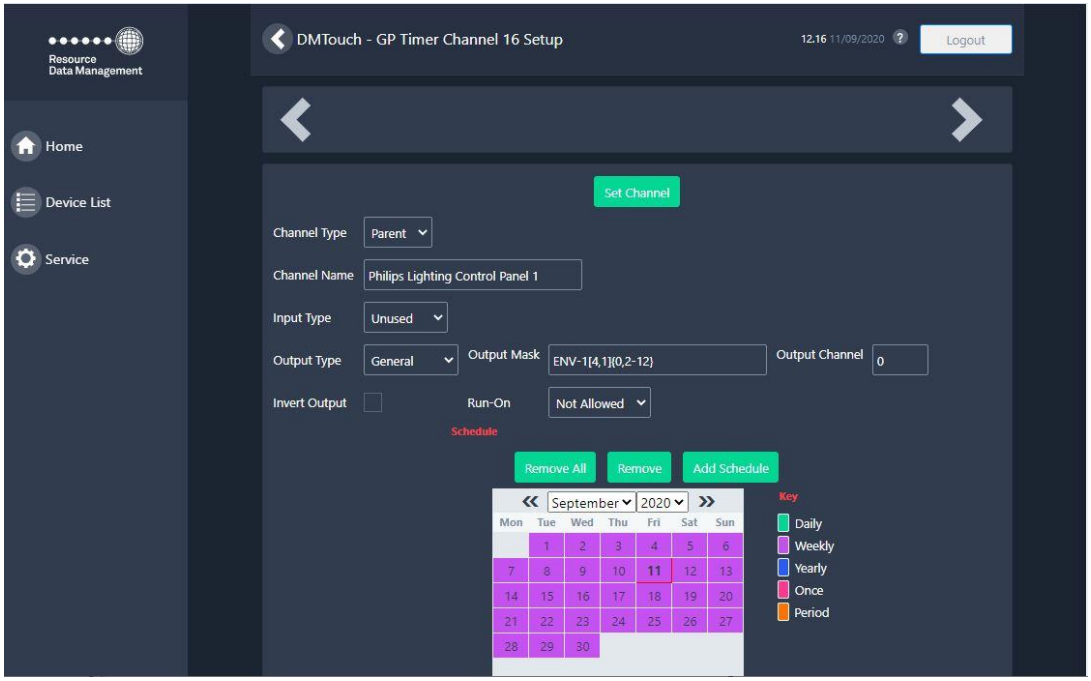
To add an area, click 'Add area'. The area will be temporarily added as '99' and aliased as 'New Area', click on 'Edit' to amend. Assign the area an 'Area number' and a 'Description', then click 'Update' to save/ apply. Similarly, to add a 'Pre-set', click on 'Add pre-set'. Again, the pre-set will be added, temporarily, as '99' and 'New Pre-set', click on 'Edit' to amend. Assign the area a Pre-set Number and a Description.

Note: the areas and pre-sets must be defined before the device will log on.



To add the Envision system to the DMTouch, navigate to Add Device. Within the Device Type, select 'Philips Envision System', insert its IP address and give it a name and description. This will then log on to the device list.

The control of the lighting system is carried out by utilising the DMTouch's GP Timer channels. By using a specific mask, all areas can have their own schedule for switching conditions.

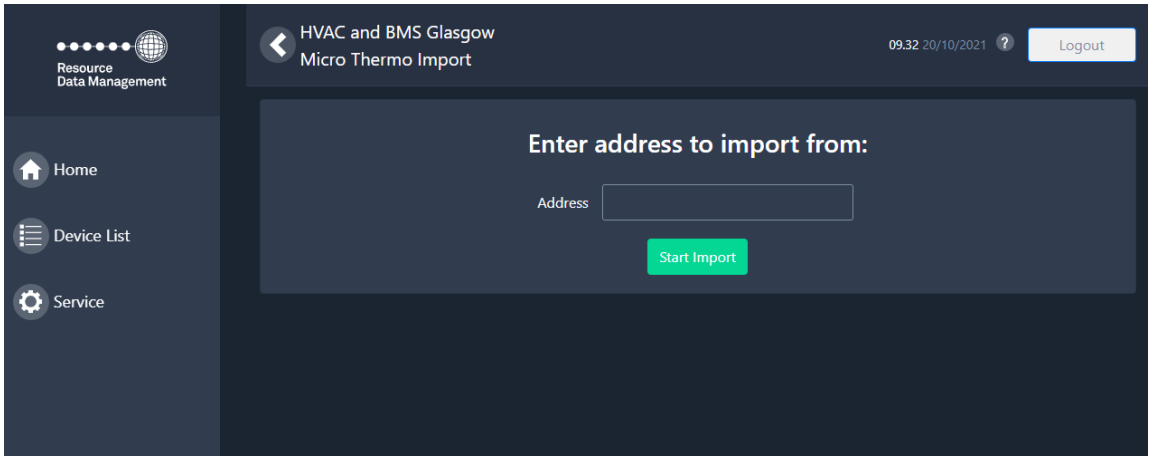


The mask used to control the device is: **XXXXXX[0,1]{a,b,c,d-f}** where;

XXXXXX: Device name (e.g. ENV-06)
[0,1]: Pre-set values to take during 'off' condition and 'on' condition (e.g. low/ high or off/ low etc.)
{a,b,c,d-f}: Output channel numbers. On the Device's IO (accessed via device list) it will list all the areas. The area's associated output number is defined by its position in the IO list. The first item is output 0, second is 1 and so on.

Micro Thermo Import

From Service Menu, select: Devices/ Network/ Micro Thermo Import



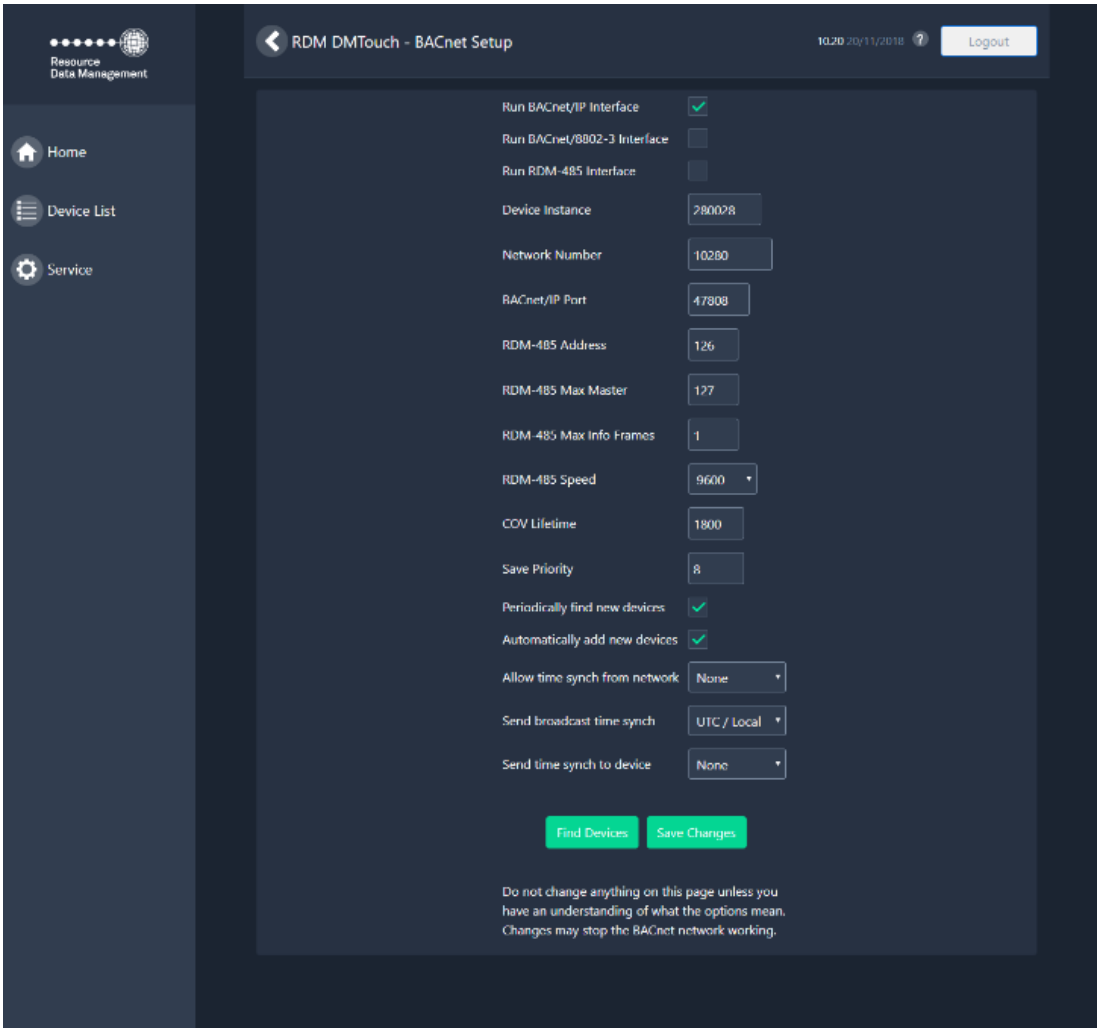
The DMTouch can import the description of nodes and points from an existing Alliance computer talking to Micro Thermo and other LON devices to assist in the ease of adding the devices to the DMTouch.

Once the Micro Thermo descriptions are imported then the DMTouch can add the devices on the LON network using the "Network Scan" feature.

Note part number PR0471-FTT-MT is required to enable Micro Thermo support. This part number includes the USB interface adapter and the first block of 32 devices. Contact RDM Support for assistance in the setup process. V4.1 is now the recommended minimum software version for monitoring Micro Thermo equipment.

BACnet/ RDM-485 Setup

From the Service Menu select: Devices/ Network/ BACnet setup



When BACnet has been enabled on the DMTouch it opens the menu for BACnet configuration, navigating to the menu will show the above page. Firstly, select the type of BACnet communications to be used by 'ticking' the interface. The subsequent options will allow the network configuration:

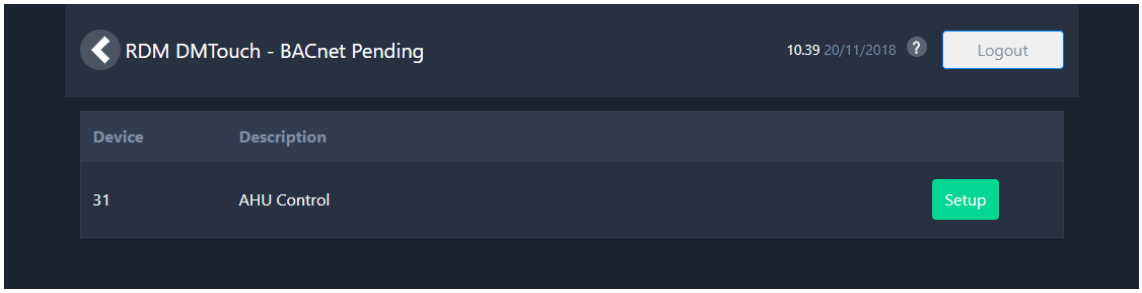
Device Instance Unique instance number of the DMTouch. Default 280028.
Network Number Network number the DMTouch is to communicate on. Default 10280.
BACnet/IP Port Virtual port number for IP protocol to communicate on. Default 47808.
RDM-485 Address Unique address for the DMTouch while communicating over RDM-485. Default 126.
RDM-485 Max Master RDM-485 Max Master. Default 127.
RDM-485 Max Info Frames RDM-485 Max Info Frames. Default 1.
RDM-485 Speed Select the RDM-485 network speed; 9600 or 38400.
COV Lifetime Change of Value period in seconds.
Save Priority
'set' and so will be set and saved as that item's parameter value. So, when set to a value of 8, any override of priority 8-16 will be saved as a parameter.
Periodically find new devices Check box to allow DM to periodically search for any new devices on the network (5 minute frequency).
Automatically add new devices Check box to either add newly discovered BACnet devices automatically to the device list or to use the 'BACnet pending ' feature, giving the user the ability to select inputs/ outputs/ parameters etc. See BACnet/ RDM-485 Pending section for more details.
Allow time synch from network Select from; UTC/ Local, Local, UTC or None. Permits time synchronisation from another networked device.
Send broadcast time synch Select from; UTC/ Local, Local, UTC or None. Broadcasts time stamps to other networked devices.
Send time synch to device Select from; UTC/ Local, Local, UTC or None.

Note: Only users with a detailed knowledge of the BACnet protocol should amend these details as altering them can have detrimental afects on the communications.

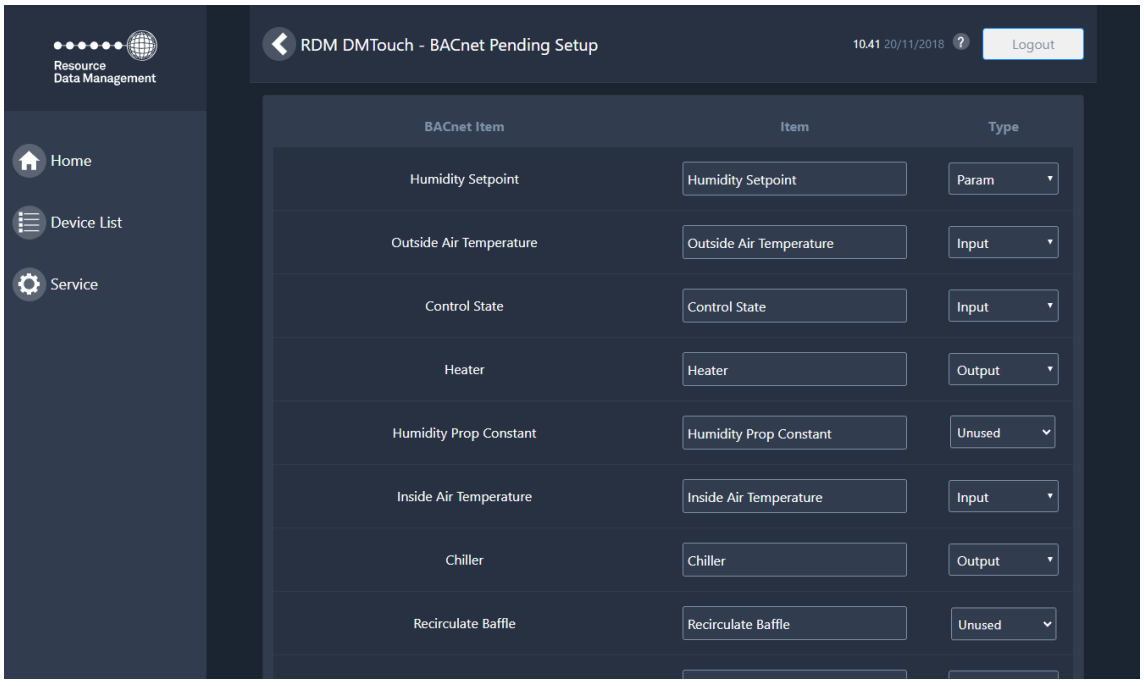
BACnet/RDM-485 Pending

From the Service Menu select: Devices/ Network/ BACnet Pending

With the 'Automatiacally add new devices' box checked within the BACnet setup pages, newly discovered BACnet devices (whether over BACnet/ IP or RDM-485) will automatically be added to the device list. This is default. When the checkbox is unchecked, the newly discovered devices will firslty be placed into a Pending Section, awaiting user interaction before being added. Upon entering the menu, where a new BACnet device has been found, it will look similar to the below.



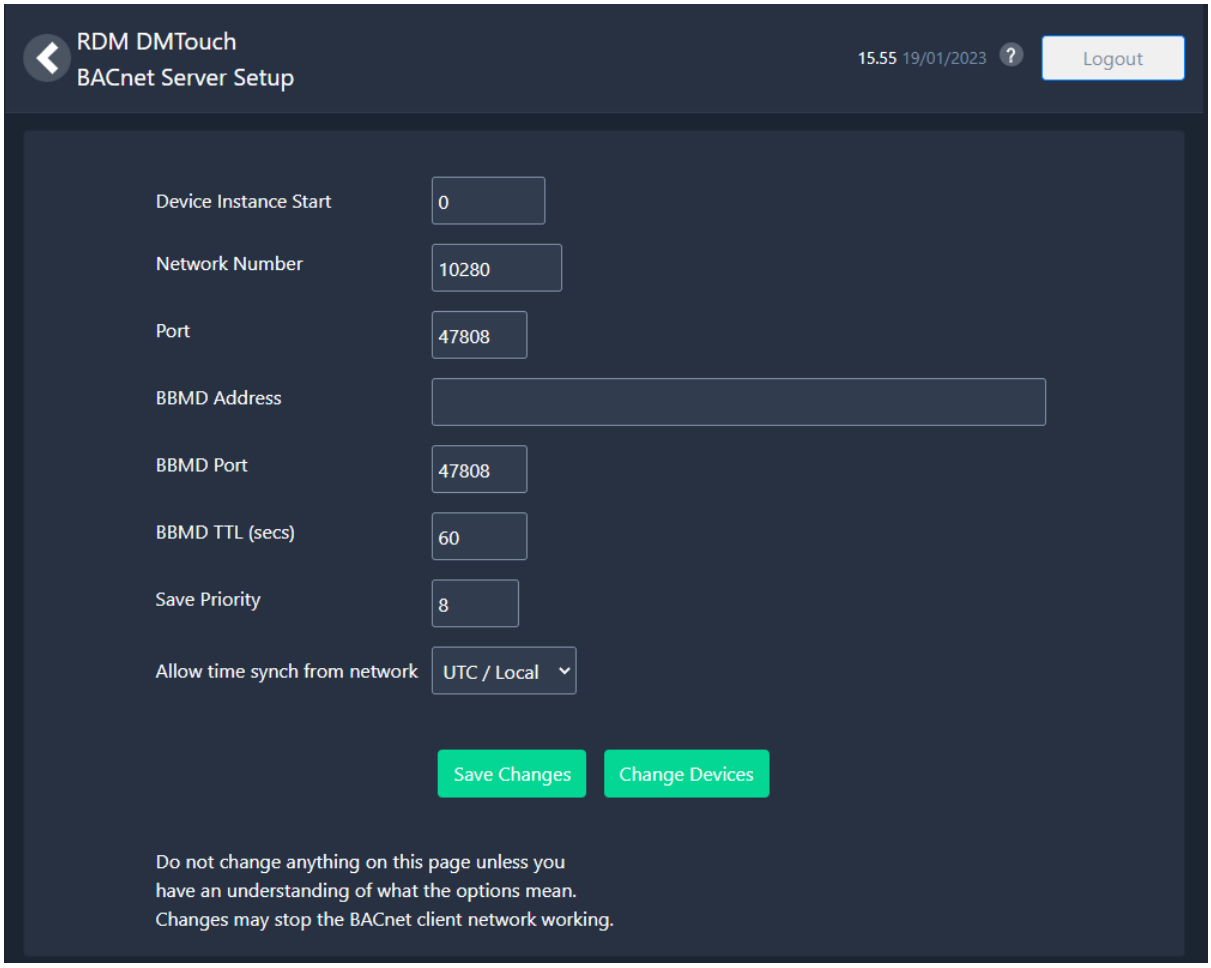
'Pending' devices will be shown here and will remain here, until the user enters the 'setup' section and confirms the BACnet points' type. Select from; 'inputs', 'Outputs', 'Parameter', 'State' or 'Constant Parameter'or 'Unused' if the item isnt to be displayed on the DMTouch.



Once the points from the BACnet device have been confirmed with their type, click on 'Save Changes'. Then to add the device to the DM's device list, click on 'Add Device'. Once the device has been 'added' the individual points cannot have their type changed.

Note : - Once configured and added on the device list, if a BACnet item needs to be altered again to another item type, the type file must be deleted, the BACnet device removed, and the panel restarted. After restarting, the device will reappear in the pending list, allowing it to be reconfigured as needed.

BACnet Server Setup (Only available in the DMTouch)



The DMTouch (PR0471-BACSI) can also be configured to send out information over a BACnet network.

If a BACnet/IP Broadcast Management Device (BBMD) is being used to broadcast BACnet messages across interconnected sub-networks then the The BACnet Server setup page will allow the user to enter details of the BBMD it is to communicate with.

Device Instance Start This is the starting number that will be then added to the network and device number to create its ID.

Network Number Network number the DMTouch is to communicate on. Default 10280.

Port Port number for IP protocol to communicate on. Default 47808.

BBMD Address IP Address of the BACnet Broadcast Management device, if required.

BBMD Port Port used for BACnet Broadcast Management device.

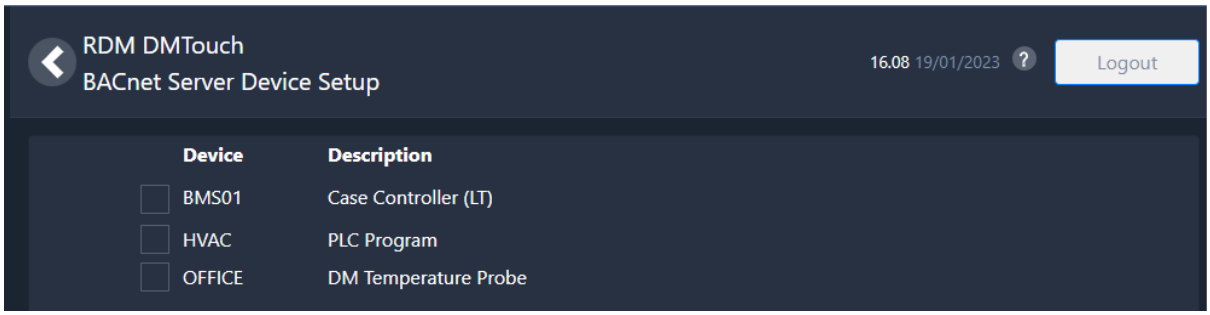
BBMD TTL (secs) Time to live limit of the BBMD.

Save Priority The BACnet priority field is selectable between 1 and 16. It sets the priority level, at which an override with this priority number or above, is treated as a non-volatile parameter 'set' and so will be set and saved as that item's parameter value. So, when set to a value of 8, any override of priority 8-16 will be saved as a parameter..

Allow time synch from network Select from; UTC/ Local, Local, UTC or None. Permits time synchronisation from another networked device.

Please note that this feature will only work over Eth1.

BACnet Server Devices



This BACnet screen allows you to select a device that you want to share with a BACnet client. By clicking on the device it will bring up the setup screen below :-



This page allows the device to be configured for communicating over BACnet. The user can set the type to Analogue Input, Analogue Output or Analogue Value. You can also configure the BACnet ID, BACnet Name and BACnet description. Once this has been setup the way the user wants, they would tick the Enable Device option and give it a unique Device Instance. Once this has been setup and it's ready to be added to the BACnet network, hit the Set BACnet Device button to confirm.

Note: Currently Alarms are not supported on this feature.
Note 2: Please note that this function is not available in the miniDM

BACnet Type Files

When a BACnet device is detected by a DMTouch, it will automatically create an associated typefile. This typefile will list all the points that the device has and allows the DMTouch to log it on to its device list.

When a device is updated subsequently altering/ moving points, then the DMTouch must have the associated type file deleted for it to re-learn the new ones. To carry this out please see the Delete Type File section. This action will remove all type files associated to that device.

Note: If an unconfigured BACnet device is conneced to the DMTouch's network, it will create a zero-size (or very small) type file which will not log on. To remove this unassociated type, a restart of the DMTouch will remove it (soft V2.4 and above).

BACnet character sets supported

The DMTouch and miniDM supports the following character sets

ISO 10646 (UTF-8)

ISO 8859-1.

Please note that the following character sets are **NOT** supported and may affect the operation of the DMTouch & miniDM

IBM/Microsoft DBCS

JIS X 0208, ISO 10646 (UCS-4)

ISO 10646 (UCS-2)

Type Writer

From the Service Menu select: Devices/ Network/ Type Writer

For Modbus devices that are not listed in the Add Device section, the 'Type Writer' feature allows a user to write their own 'type file' (or template) to allow communications (read only) to a 3rd party device. For successful communications, the device must be compatible with either RDM's USB RS485 dongle (please see the Appendix 6 for configuration) or RDM's Modbus RS485 to IP communications module (PR0020 MOD).

Note: Modbus RS485 to IP comms with Type Writer template is only compatible with DMTouch V2.6 & above.

The DMTouch can have multiple user-generated types enabled, activated one at a time with part number PR0655-DM-TYP. The Type Editor User Guide can be found in Appendix 7. The created user type will then be selectable in the Add Device Section.

The Modbus template generation feature, Type Editor, requires the user to have a full understanding and working knowledge of the Modbus protocol. RDM Technical Support cannot provide training or assistance in relation to the Modbus protocol and the commands implemented therein. Support will only be provided to those conversant with Modbus and in relation to the Type Editor functionality specifically.

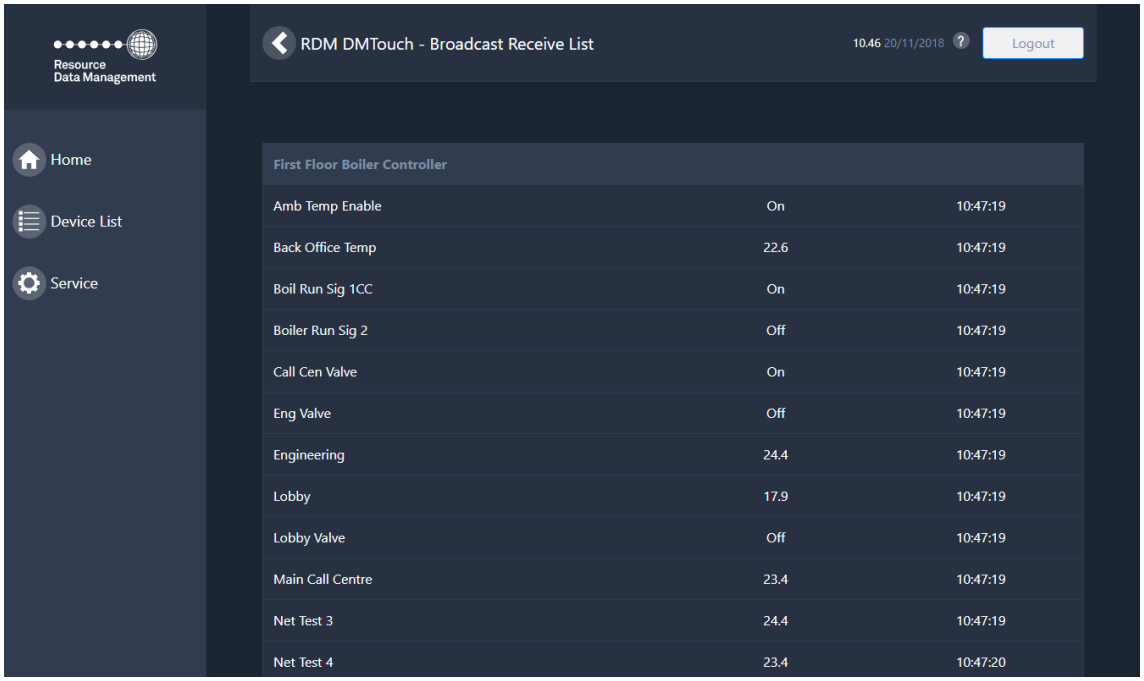
For users unfamiliar with Modbus, RDM provide a template creation service allowing for a template to be generated for the 3rd party device in question. A nominal fee will apply for each template created by RDM.

Note: the above process relates to creating 'Read Only' templates. For Read/Write templates please contact RDM Technical Support.

Broadcast Receive List

From the Service Menu select: Devices/ Network/ Broadcast Receive List

The broadcast receive list is an informative tool that assists users by providing details on all devices broadcasting values across the network. It will provide information on the broadcasting device's name, items, current values and the last updated time stamp. An example is shown below.



If any new devices are added to the network with broadcasting values, the list will automatically be updated.

XLON Setup

From the Service Menu select: Devices/ Network/ XLON Setup

With the feature enabled, entering the menu will list all XLON adapters connected to the DMTouch*. Depending on whether they have been previously configured or to be setup will list different options. For new installs press the 'Add' button to add the adapter to the XLON network. Then to add devices attached to LON network carry out a Network Scan.

When adapters are to be replaced with another device, use the 'Replace' option. It is recommended to plug only one adapter in at a time for setup.

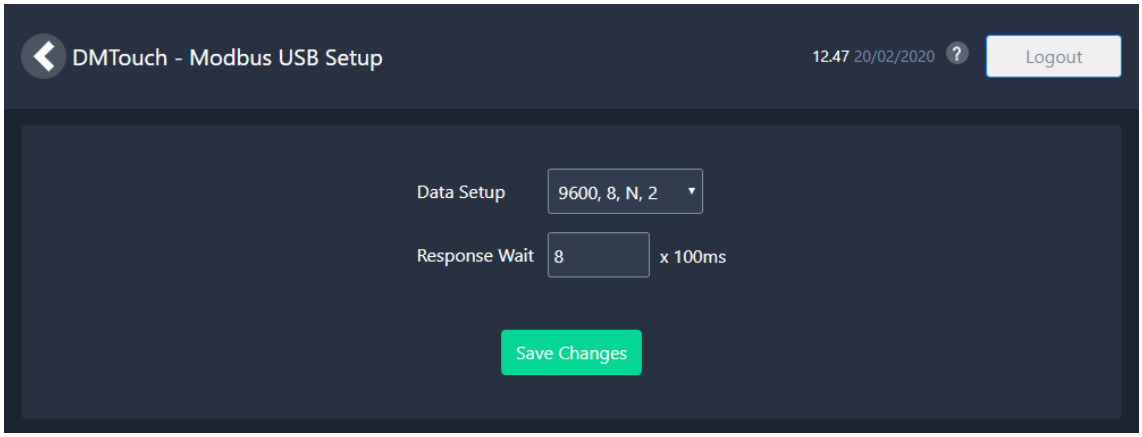
A maximum of 2 XLON network adapters can be used on a single DMTouch.

*__Note__: The DMTouch requires a system restart with the devices connected before it will list them.

Modbus USB Setup

From the Service Menu select: Devices/ Network/ Modbus USB Setup

The DMTouch can communicate to 3rd party Modbus devices using the RDM USB Modbus adapter (PR0623). When the adapter is enabled (PR0623-ENA) and connected to the panel this menu allows the user to configure the communication settings of the adapter to match that of the device.



Data Setup Options list; Baud Rate, Data Bits, Parity & Stop Bits. Select from;

- 1200, 8, E, 1
- 1200, 8, N, 2
- 2400, 8, E, 1
- 2400, 8, N, 2
- 4800, 8, E, 1
- 4800, 8, N, 2
- 9600, 8, E, 1
- 9600, 8, N, 2
- 19200, 8, E, 1
- 19200, 8, N, 2
- 38400, 8, E, 1
- 38400, 8, N, 2

Response Wait Enter a value (x100 ms) the DMTouch should wait before it deems the 3rd party device as not responding.

Note: - When the Stop bits are set to 2, the panel will generate two stop bits but will be able handle one or two coming back

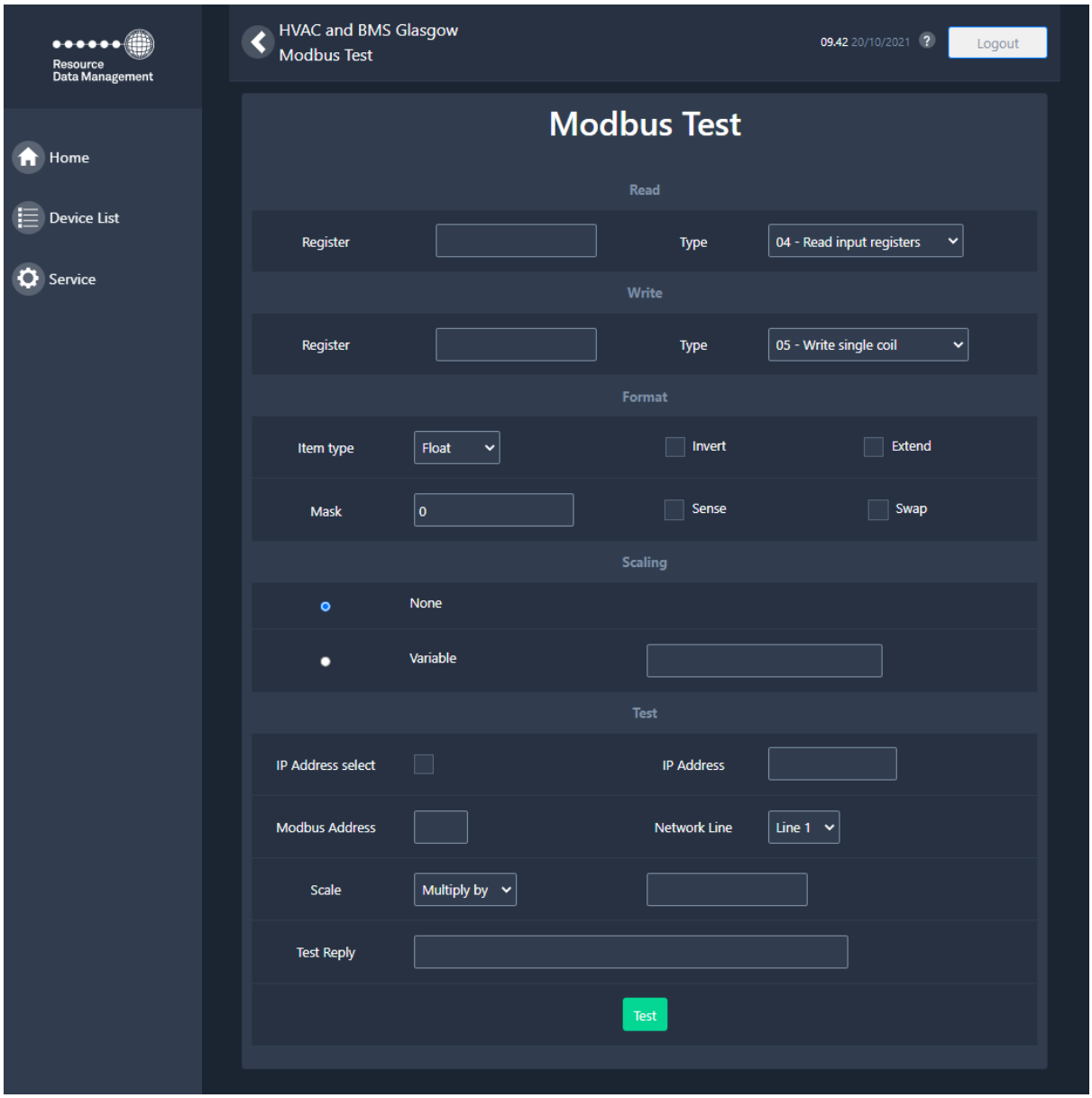
Please be aware changes made within the USB setup menu will affect communications to all 3rd party Modbus devices connected on that adapter – do not change anything on this page unless fully understood.

The default setting of the Modbus USB adapter is;

Baud rate	9600
Data bits	8
Parity	No
Stop Bits	2

Note: Only Issue 3 Modbus USB adapters can be configured.

Modbus Test



This screen allows the user to create a test register that the DMTouch / miniDM will then send to the connected Modbus device. This allows the user to test if the setup of the registers in the Type Writer and if the values coming back are correct.

The user would populate the Read, Write, Format and Scaling items and then enter the connection details in the Test section as follows : -

IP Address Select: Check this option if using an IP to Modbus gateway, if you are using a USB to Modbus then leave this field unchecked.

IP Address: Enter the IP address and port number (if needed) of the IP to Modbus gateway being used in this field (e.g 10.1.2.50:100).

Modbus Address: Enter the Modbus address of the device you are testing.

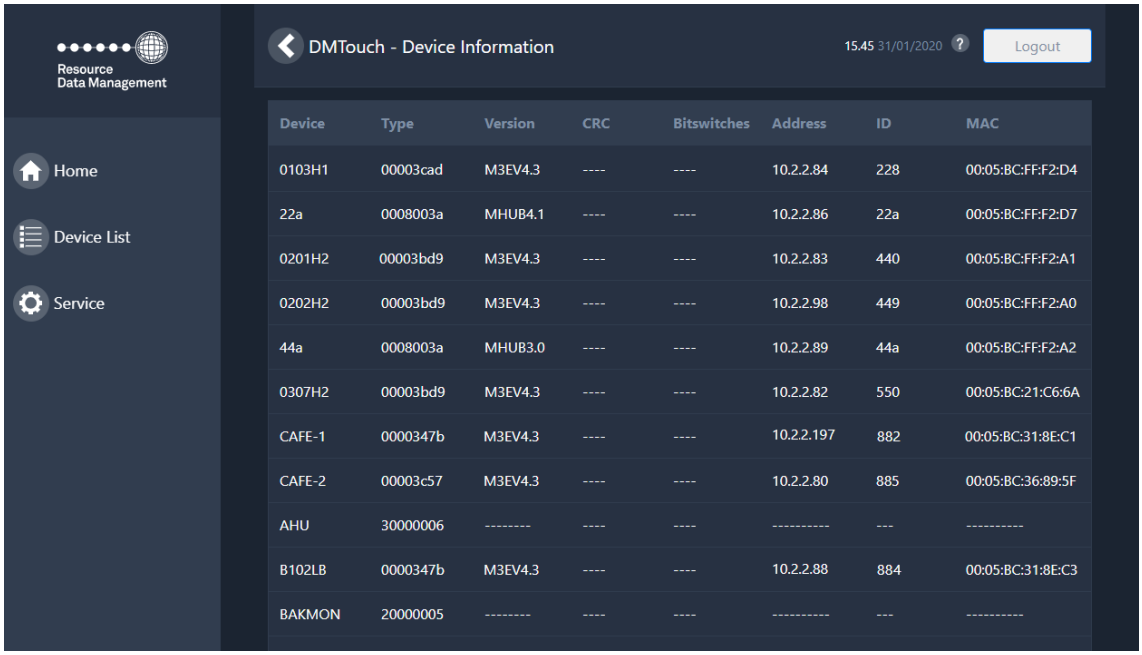
Network Line: Enter the network line that the device is connected to in this field.

Test Reply: The reply from the register being tested will be displayed here.

NOTE: To use the test feature, the user must first create a blank user type, and then using that type, add the Modus device to the DM. This is so that there is an initial Modbus line of communication established between the DMTouch/miniDM and the Modbus device.

Device Info

From the Service Menu select: Devices/ Device Info



Device	Type	Version	CRC	Bitswitches	Address	ID	MAC
0103H1	00003cad	M3EV4.3	----	----	10.2.2.84	228	00:05:BC:FF:F2:D4
22a	0008003a	MHUB4.1	----	----	10.2.2.86	22a	00:05:BC:FF:F2:D7
0201H2	00003bd9	M3EV4.3	----	----	10.2.2.83	440	00:05:BC:FF:F2:A1
0202H2	00003bd9	M3EV4.3	----	----	10.2.2.98	449	00:05:BC:FF:F2:A0
44a	0008003a	MHUB3.0	----	----	10.2.2.89	44a	00:05:BC:FF:F2:A2
0307H2	00003bd9	M3EV4.3	----	----	10.2.2.82	550	00:05:BC:21:C6:6A
CAFE-1	0000347b	M3EV4.3	----	----	10.2.2.197	882	00:05:BC:31:8E:C1
CAFE-2	00003c57	M3EV4.3	----	----	10.2.2.80	885	00:05:BC:36:89:5F
AHU	30000006	--------	----	----	----------	---	----------
B102LB	0000347b	M3EV4.3	----	----	10.2.2.88	884	00:05:BC:31:8E:C3
BAKMON	20000005	--------	----	----	----------	---	----------

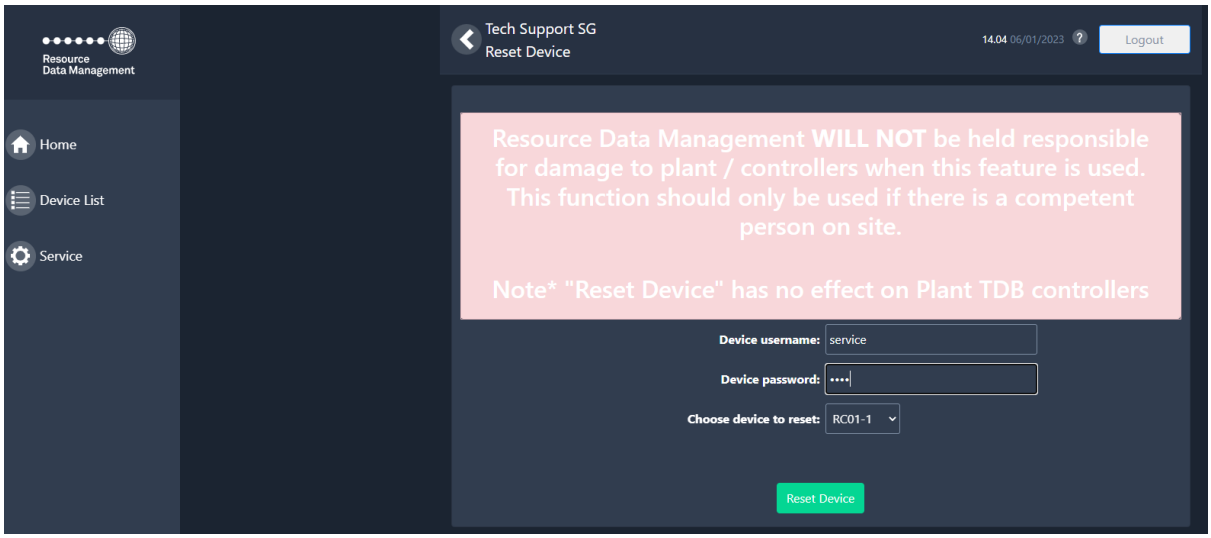
The columns give the following information relating to controllers.

Device: Name of the device as it appears in the DMTouch Device List. When the device name appears in red it indicates the device in question is currently 'offline'.
Type: Unique number identifying each different type of controller.
Version: Software revision.
CRC: Error check code (not always used).
Bit-switches: Genus® 3rd party controller bit-switch settings.
Address: Assigned network address. **Note**: for a Split device the parent device name is displayed.
ID: Device ID (e.g. Mercury IP module switch settings).
MAC: MAC address of the IP device (eth0 only).

The device info page can be sorted via each column displayed by clicking on the column header.

Device Reset

From the Service Menu select: Devices – Device Reset

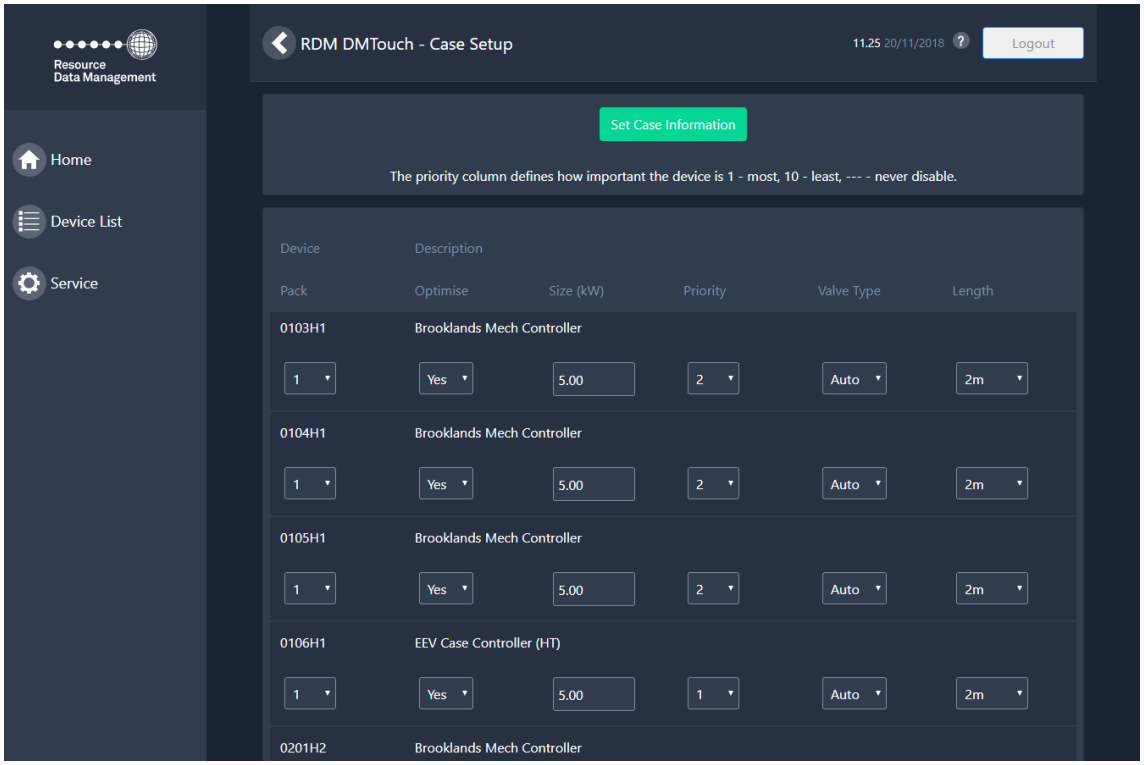


Use this feature with a compatible RDM device to force a remote reset of the equipment. Enter the device's log-in credentials (user name & password) and select it from the drop-down list below.

Note: RDM recommend that there should be a competent engineer on site while performing this task. RDM will not be held responsible for any damage to plant and or controller when the feature is used.

Case Setup

From the Service Menu select: System/ Energy/ Case Setup



Case setup for energy saving provides the below fields for configuration;

Pack: Used with the DMTouch Pack Optimisation feature (see Pack setup for more details), assign the desired pack number to each device. If the optimisation feature is not in use, this feature can be used to highlight pack groupings for information purposes only.

Optimise: Enable Pack Optimisation feature on a case-by-case basis regardless of pack association. See Pack Setup for further details.

Size: Enter in kW the cooling capacity of the refrigeration cabinet. For use with the Intelligent Load Shedding feature.

Priority: Assign a priority to each case, this can be set from 1 to 10. A value of 1 is the highest and a value of 10 is the lowest priority. Cabinets with a lower priority will be turned off first when the Intelligent Load Shedding feature is active.

Valve Type: For use with Pack optimisation energy feature.
If Mercury 6-5M set to LLSV
If Mercury 6-5E using EEV control set to EEV
If Mercury 6-5E using EET or EET/EEV control set to EPR
If unknown set the valve type to 'Auto'

Length: Enter the case length if known. **Note**: for information purposes only, not used in calculations.

Split Monitor

From the Service Menu select: Devices/ Split Monitor

RDM multi-channel monitors, such as the Mercury 6 Channel Monitor, can be split into individual channels. Once the monitor has been split, each channel takes on the form of an individual controller, this allows a user to more easily identify the status of a particular input on the device. This process must be followed should the user wish to inhibit any of the inputs or include the device on a Layout.

After the split, the channels names are identified by the addition of the channel number after the original monitor's name. These names must be aliased in the normal way to create the 6-character device name.

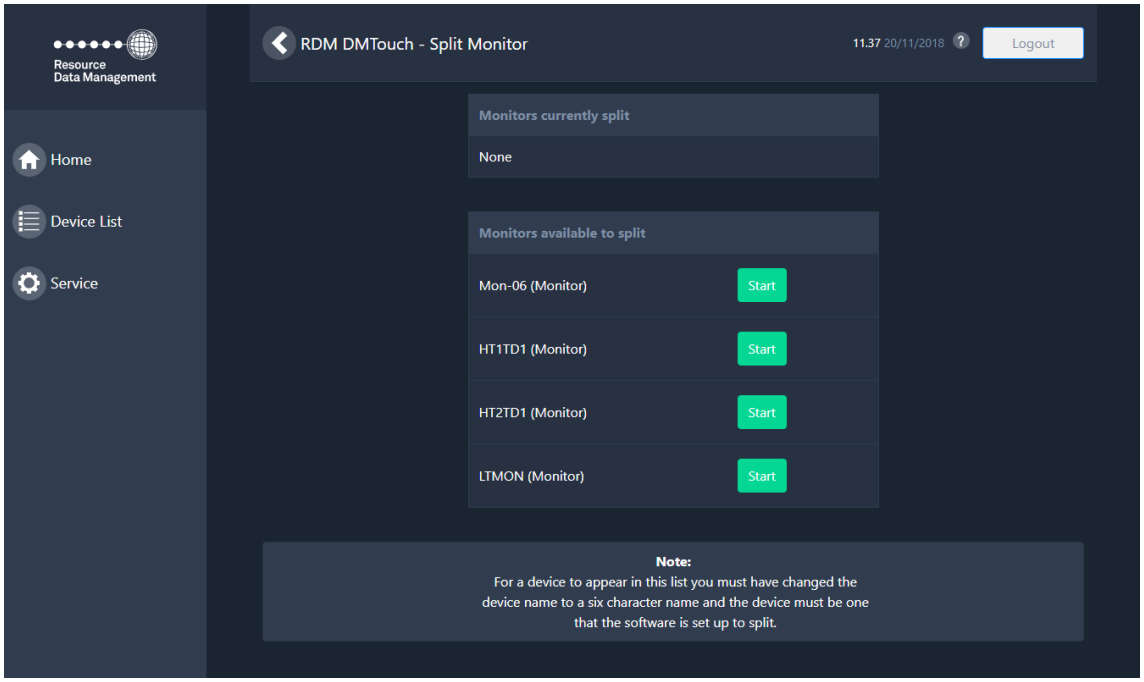
Example: If a Mercury 6 Ch Monitor has been named **Mon-06**, (**note**: the device name must not exceed 6 characters) after the split, Mon-06 will not be seen on the devices list, instead all active channels of Mon-06 will be shown as:

Mon-06.01	Channel 1
Mon-06.02	Channel 2
Mon-06.03	Channel 3
Mon-06.04	Channel 4
Mon-06.05	Channel 5
Mon-06.06	Channel 6

If a channel is **off**, it will **not** appear on the devices page.

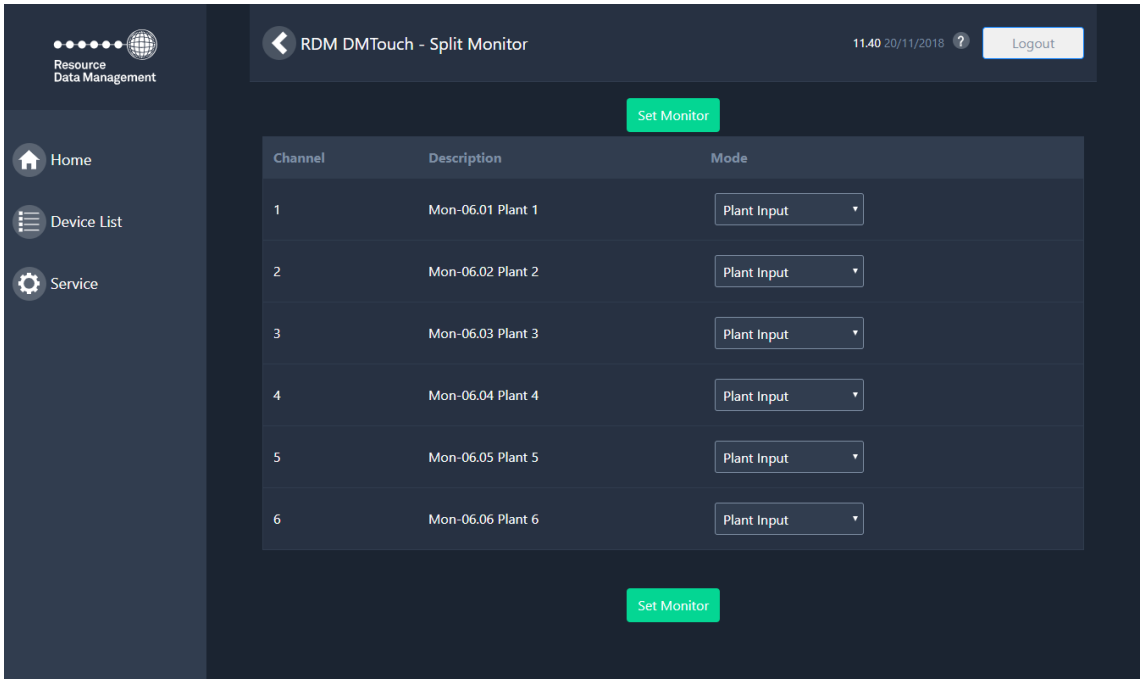
These devices now function as 'virtual' devices, and can be setup and operated like a normal device. If for some reason the channels are required to be re-combined back to a single device, this can be done by selecting the 'stop' button on the 'split monitor' screen. Performing this operation will reset all of the split aliases back to the single monitor defaults. If a monitor has previously been configured (item aliases, alarm aliases, alarm index numbers etc.) the split monitor function will retain these values and settings.

Clicking on the Split Monitor menu will result in a page similar to this being displayed;



Click the Start button on any Monitor that is available to split. For a device to appear in this list the device must be one that the software is set up to split. For example, Mercury 2 Monitor or 48 Channel Data monitor.

After a 'split', to activate an 'off' channel, or change the channel function, click on the edit button and select the desired function. Below is an example of the edit Monitor page on a 6 channel Mercury Monitor.



Note: on a 48 channel Data Monitor after the split: defrost channels are not shown as controllers, but the associations to the probe channels are retained. Use the normal 'set Parameters' function to complete the channel set-up.

Split Device

From the Service Menu select: Devices/ Split Device

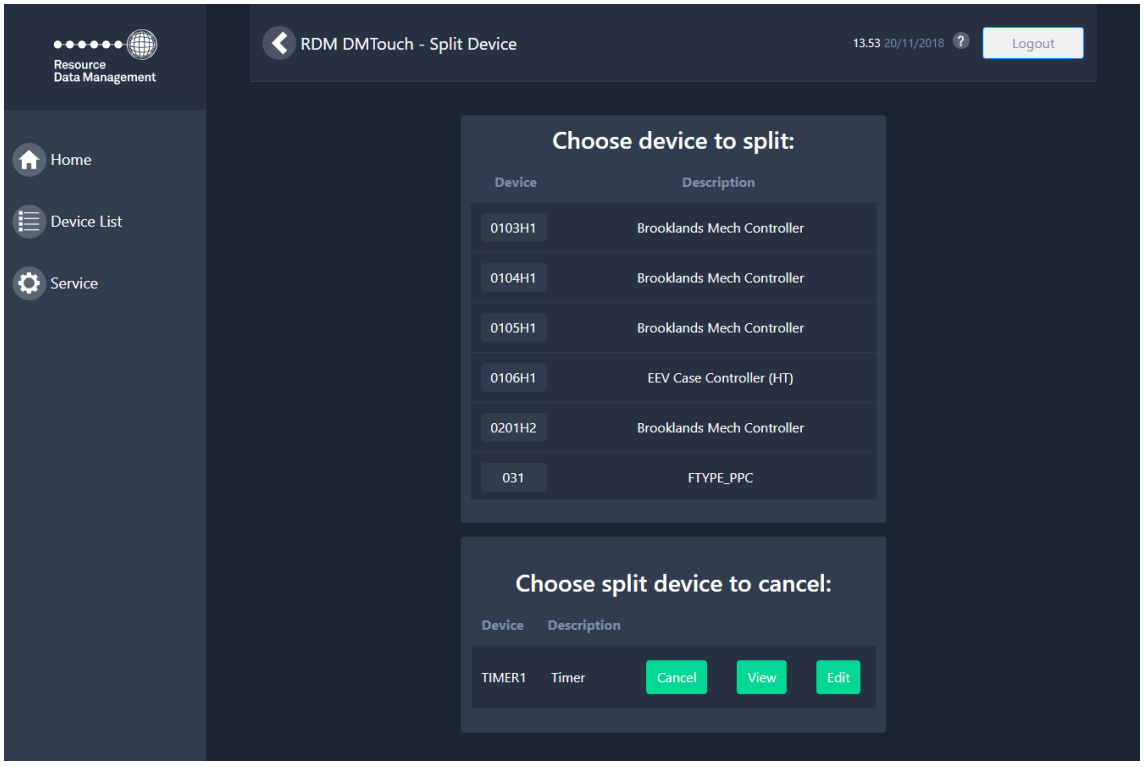
The Split Device feature can be used to split the inputs, outputs and parameters of one device to create multiple devices. For example, a Pack/ Condenser controller can be split so that it appears as two controllers on the DMTouch device list. One controller could have the inputs, outputs and the parameters for Section 1, the pack control, with the second controller having the inputs, outputs and parameters for Sections 2 the condenser control.

Note 1: The Split Device feature should only be used with physical networked controllers and not with a DMTouch TDB program or a local I/O. The user cannot split a device that is offline.

Note 2: When logging on a circuit controller with software V3.9 and above on to the DMTouch with V2.6 and above, the split will be automated and specified under the setup of the circuit controller. Please consult the Circuit Controller's documentation for more details.

Note 3: When logging on a Superpack controller with software V3.9 and above with its 'Auto-Split' feature turned 'On', the split will be automated and splits the device into its configured sections. Please consult the Superpack documentation for more details.

Clicking on the Split Device icon will result in a page similar to this being displayed;

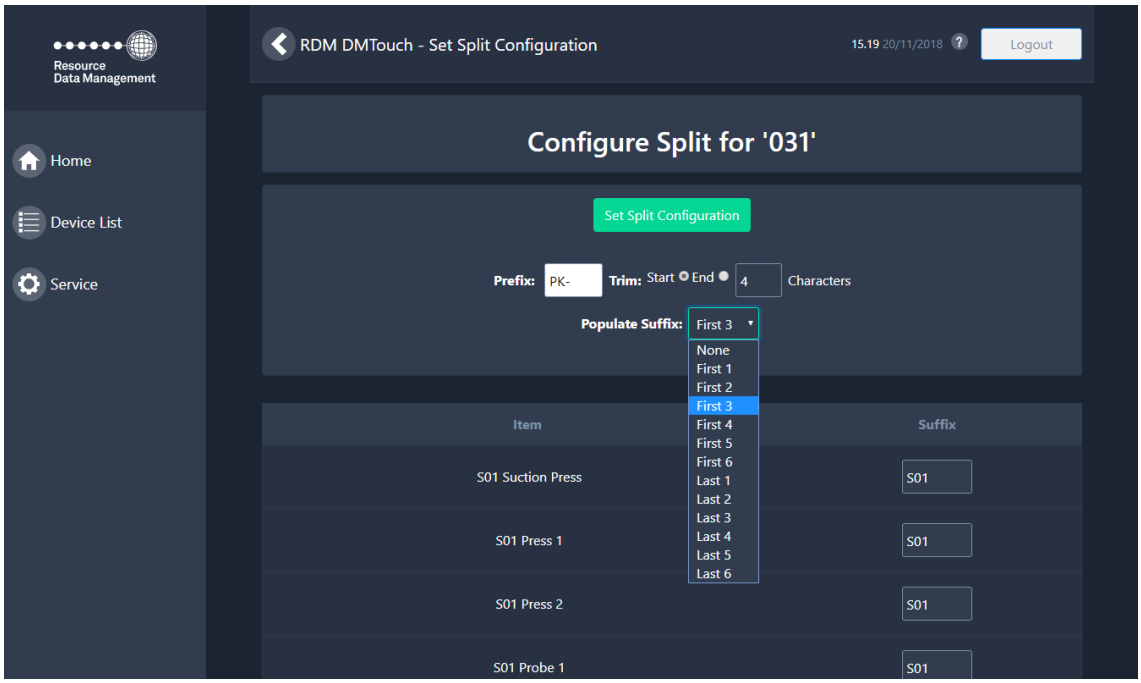


Care should be taken when splitting a controller that has a defrost control strategy or multiple defrost control strategies configured to receive remote defrost signals from the DMTouch. In this instance a DMTouch defrost timer channel(s) will be required for each of the split devices/sections created depending on the naming convention applied to the split devices.

Note: Before splitting a Parent device its name must be one which will not be affected by defrost.

Clicking on the 'Cancel' button associated to a device from the 'Choose split device to cancel' list will allow the user to stop a split currently operating it. Clicking on the 'View' button associated to a device will allow the user to see the split details it.

To begin the process, click on the device you wish to split which will result in the screen below.



In this example a device '031' was selected.

Prefix/ Suffix

Enter characters in the Prefix box which will make up the first part of the device(s) name (e.g. PK-1). Enter a maximum of six characters into the suffix field for each item you wish to group together, to create a new device, when the split feature is used. For example, any item which has a S01 in the suffix column will be grouped together to create a device. Any item which has a S02 in the suffix column will be grouped together to create a device.

The Suffix column can be filled in automatically by selecting from the drop-down menu, selecting up to the first 6 characters or last 6 characters of the item.

It can also be filled in manually. So, if you have Prefix 'PK- 'and type S01 in the Suffix for everything to do with section 1, everything with Suffix S01 will appear on device list as one controller.

Trim

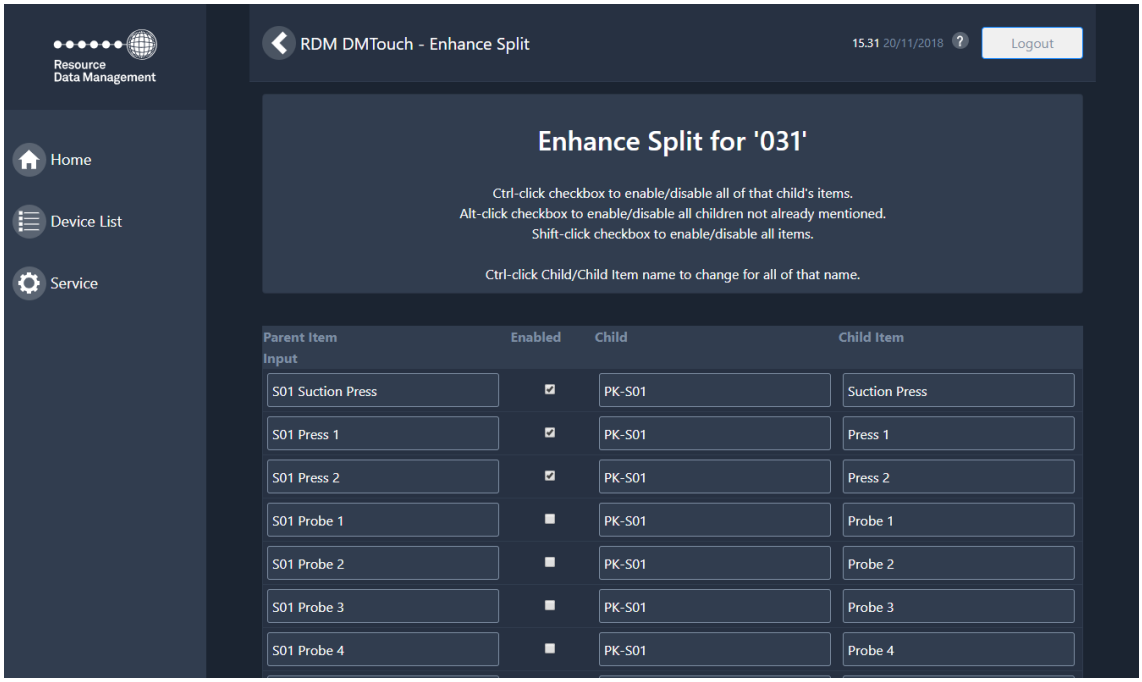
The 'Trim' option can be used to remove the characters from the device's Items. For example, with an item named 'S01 Suction Press', select to trim 'Start' and '4' characters (as per above example). The result, shown in the 'Enhanced Split' (following page) will be to list the item as 'Suction Press' – it has trimmed off the first 4 characters.

Once the appropriate fields have been filled in click 'Set Split Configuration' to begin the device split.

This will take you to Enhance Split - See following section.

Enhance Split

The 'Enhance Split' screen will be displayed, as per example below.



The table will list:

Parent Item: This is the original item as it appeared in the main device.
Enabled: A check box to offer the choice whether to show the 'split item' or not within the new split device.
Child: Once the split is complete, the 'Child' is the new split device name. This is a combination of the Prefix and Suffix set from the Split Device page.
Child Item: This is the item that will be listed within the new split device. This shows the item with the 'trimming' applied (from the Split Device page).

Within the '**Enabled'** column the user can carry out some quick actions using the PC's keys:

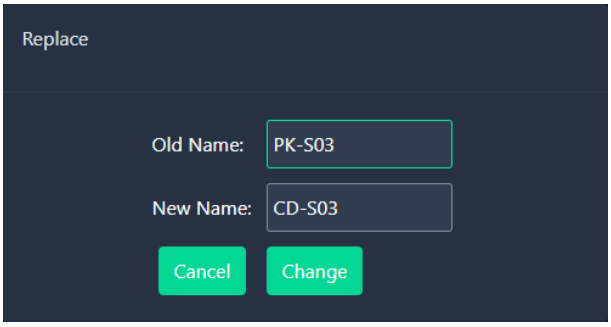
Ctrl Key Hold the **control key** and click a checkbox to remove all selections with the same Child Input Name. E.g., clicking on the top 'Enabled' checkbox (PK-S01) would remove all Inputs with the name 'PK-S01'.

Alt Key Hold the **Alt key** and click a checkbox to enable/ disable all children not already mentioned (from top of list). E.g., If only PK-S01 to PK-S03 are required then Holding Alt key and clicking 'Enabled' checkbox at PK-S04 would delete everything below that has child Input PK-S04 to PK-S06.

Shift Key Hold **Shift key** and click a checkbox to enable/ disable all items. E.g. Holding Shift key and clicking any checkbox will disable every Child Input.

Within the '**Child Item'** or '**Child Input'** columns:

Ctrl Key Hold the **Control Key** and click in Child Item or Child Input and a box will appear with the 'Old Name' and 'New Name'. You would type in what you want the new name to be. This would change all Child Items or Child Inputs with the same name for the old name to the new name.



To find out the parent device of a split device please refer to the Device Information page and view the address column for a given split device.

Note: Do not change any alarm aliases before splitting device. Alarm alias must be left at default as this may cause further issues after the device has been split. Alarms should only be re-aliased after the split is complete.

Note: On DMTouch version 2.5 and above, split BACnet device items can be overridden using the DMTouch's overrides feature.

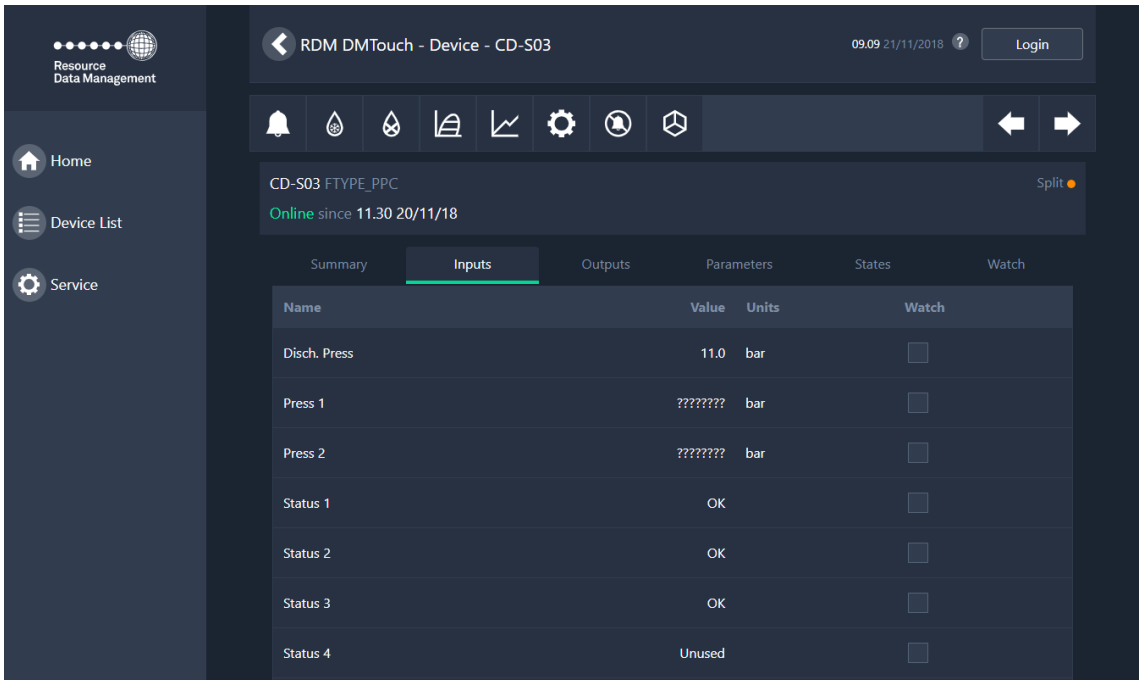
Note: Some items may not be visible when split, for example probe offsets.

Viewing a Split Device

Once split, the new devices will appear in the device list. Below is in the screen with CD-S03, PK-S01 and PK-S02 from our example. The device list also indicates how many devices have been split or are hidden by viewing the 'Hidden Devices' within the device key list. '031' would now count as a hidden device.



By clicking on CD-S03 its values are displayed. CD-S03 has its own inputs, outputs, parameters and alarms. The split device name and description can now be aliased.



Removing a Split Device

Once a Parent device has been split, should the parent device be removed from the DMTouch, the split must also be cancelled. In future occurrences, the user must ensure the device split is firstly stopped.

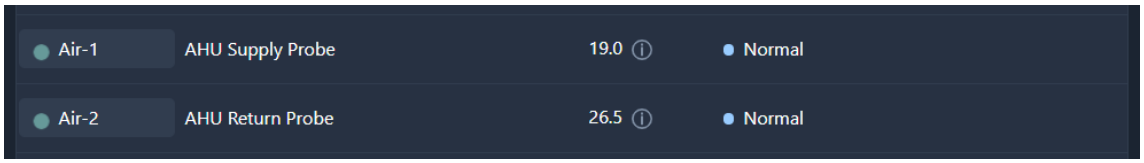
Edit Split

To enter the 'Edit Split' page, there must be a device which has already been split. If any alterations are to be made, then the edit split feature allows the changes to be made without the need of cancelling and re-splitting the device. This is also convenient in the situation where a TDB program is perhaps split and new IO is added to the program. Entering the edit split page will allow the new points/ IO to be added to the already split devices.

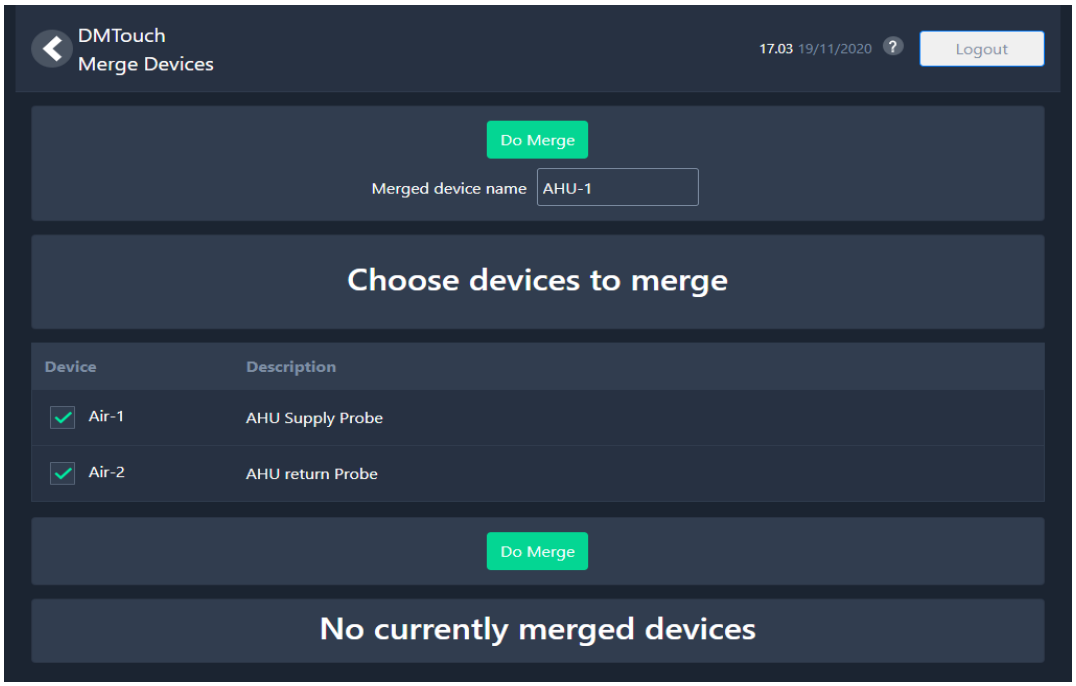
Merge Devices

From the Service Menu select: Devices/ Merge Devices

This feature can be used to create one single 'device' from multiple others currently logged on to a DMTouch. For example, below shows two DMTouch probe inputs; 'Air-1', 'Air-2'. Using the feature, we can merge the two into a single device.



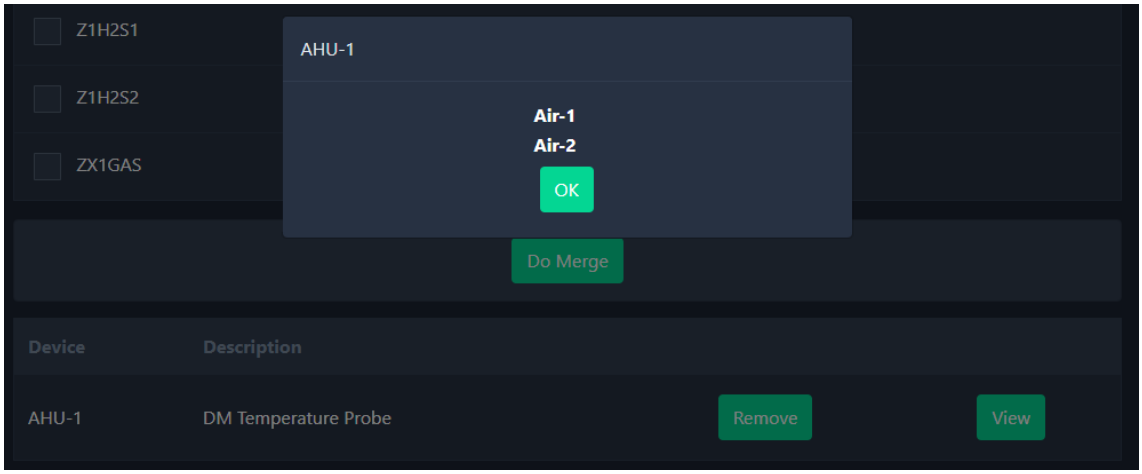
Clicking on the 'Merge Devices' menu will result in the following page;
*New Image below to replace "Merged slave name"



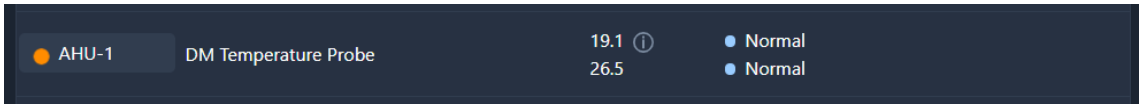
At the top of the page type in the 'Merged device name' - this is the alias of the merged device.

From the list of devices, use the check boxes to indicate which devices to merge, then click 'Do Merge'.

Once merged, the single device will be listed in the table at the bottom of the page. The user can further view the devices that have been merged together by clicking on the 'View' button.



Viewing the new 'device' will be the same as viewing any other single device.

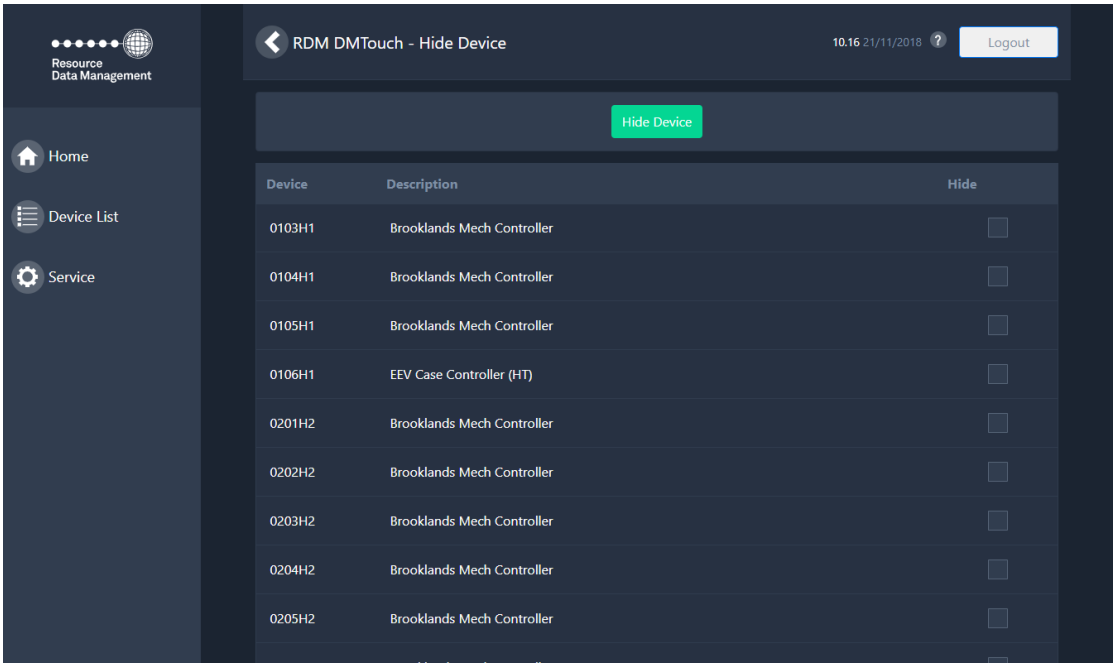


Aliases for its name, items or alarms can be altered if required using the 'Aliases' menu.

To 'un-merge' any device, navigate to the same setup page and click 'Remove'.

Hide Device

From the Service Menu select: Devices/ Hide Device



Select the device(s) to be hidden by ticking the appropriate box and clicking the 'Hide Device' button. Any device which is hidden will not appear in the device list and it will not be configurable via the Alarm Indexes page, Device Parameter page and so forth. The device will still appear under the Device Info page and the DMTouch Device list also indicates the number of Hidden devices. The DHCP page shows hidden devices by greying out the device name.

TDB Editor

From the Service Menu select: Devices/ TDB Editor

The DMTouch has the facility to run The RDM Data Builder (TDB). This is a program that allows the user to design and run programs using both the DMTouch internal I/O and I/O through network devices. Refer to the Data Builder User Guide for full instructions on how to use the Data Builder features.

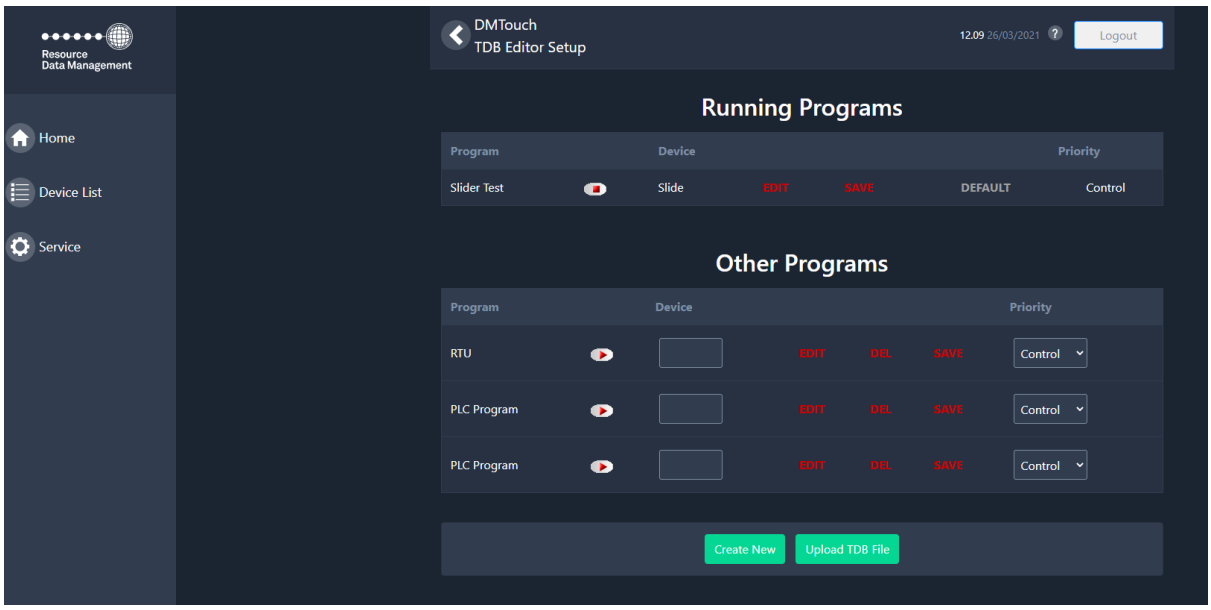
Due to the flexibility of the TDB Editor and the complex control strategies it allows a user to create, RDM recommend that the developer of the TDB application carry out functionality tests prior to installation to ensure the control strategy designed operates as expected. E.g., all inputs can be read, all outputs activate when operated by the TDB program and so forth.

Data Builder can be enabled in the DMTouch in two configuration options:

TDB (PR0485) or TDB-LITE (PR0485-LITE)

TDB Setup

Entering the TDB menu will list all the currently running programs and those that have been uploaded but not enabled. An example is below.



At the bottom of the page, it will show two buttons (PC only); 'Create New' and 'Upload TDB File'

Create New	This option permits the user to create a new TDB using the DMTouch's in-built editor.
Upload TDB File	The user can upload a pre-made TDB file which has been created on the Desktop TDB editor.

Once a TDB program has either been uploaded or created within the online editor, the plc will be listed in the 'Other Programs' table. There, the user has the option to Edit, Delete or Save (local copy) the TDB program.

Before a program can be started a 6 character 'Device' name must be entered for the TDB program. This name will be assigned to the TDB program when it appears in the device list. Additionally, the priority of the TDB program must be selected, either; 'Control' or 'Monitor'. When set to 'Monitor', the processing time for the plc is reduced. This will aid when running large plc programs in, for example, older hardware models of Data Managers. Once the program has a device name and priority assigned, click the 'play' icon to start the program. With the 'full' TDB option enabled, a maximum of 16 programs can be running at any one time on the DMTouch and 1 at a time on the miniDM, each with the capability of utilising up to 4096 blocks. If the maximum allowable number of blocks is exceeded then the 'Start' button for the program will be greyed out until the number of blocks used is reduced below 4096. When creating a TDB program anything placed onto the TDB canvas would constitute a block, for example static text, a setting block, a mathematical block, the interconnecting lines between one block and another etc.

For details on how to use the editor please consult the TDB Desktop Editor's user guide. This can be found either online in RDM's website or built-in to the editor.

TDB Lite

TDB Lite has the same features as the full TDB option but has the following restrictions applied; Only **1** TDB program can be running at any time; each program is allowed a maximum of 100 blocks. Blocks include such items as Static text, interconnecting wires between blocks, functional blocks, mathematical blocks etc.

If the maximum allowable number of blocks is exceeded then the 'Start' button for the program will be greyed out until the number of blocks used is reduced below 100.

TDB Trial

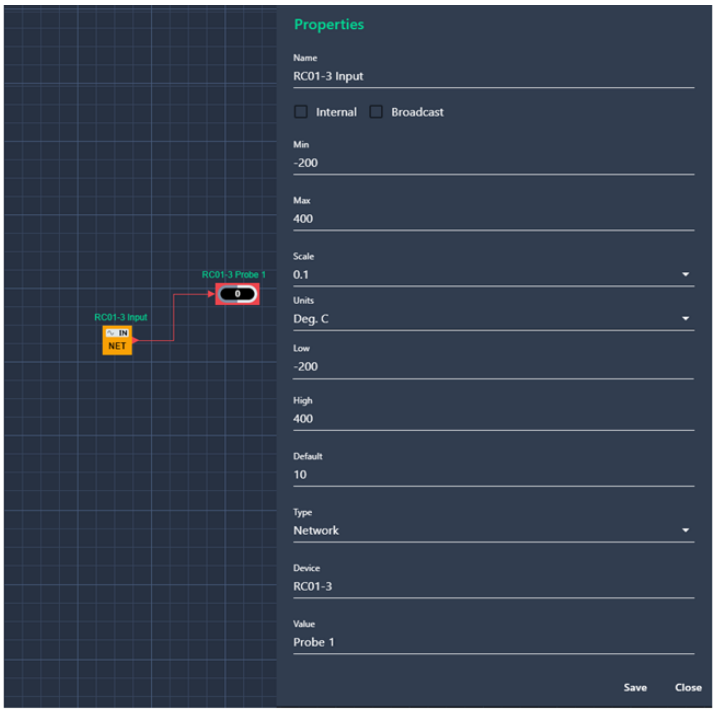
If neither TDB nor TDBLite is enabled when the user clicks on the Control Editor Button then the option to start a free 90-day trial is shown. Once activated the user will have full access to the TDB application suite. This allows for 16 TDB programs to be running at any one time on the DMTouch with each program having a maximum of 4096 blocks. The miniDM will only allow for 1 program to run at any time. The DMTouch webpage shows a running countdown and highlights the number of days remaining for the trial.

Note: Once the 90-day trial expires all TDB programs running will stop operating. The user will be unable to use any of the features of TDB, for example save a TDB program from the DMTouch. When the trial expires clicking on the Control Editor icon will result in a message 'Not Enabled'. To enable the feature permanently please contact RDM Sales quoting part numbers PR0485 and PR0485-LITE for the DMTouch or PR0485-MD and PR0485-MD-LITE for the miniDM. An activation key will be issued, which can be used during the trial or once the 90-day period has expired. Once enabled any TDB programs previously running on the panel during the trial will still be available, however it is always prudent to keep a backup copy.

Reading In Networked Device Inputs

To pull in information from a networked device, the user would use an Analog Input block. In the example below the TDB program will read in the value from Probe 1 of a connected monitor device.

Type This must be set to 'Network'.
Device Enter the controller's name as it appears in the device/network list e.g. 'RC01-3'.
Value Enter the input you would like to pick up, making sure the name matches exactly the same as on the item is displayed (including upper- and lower-case characters)



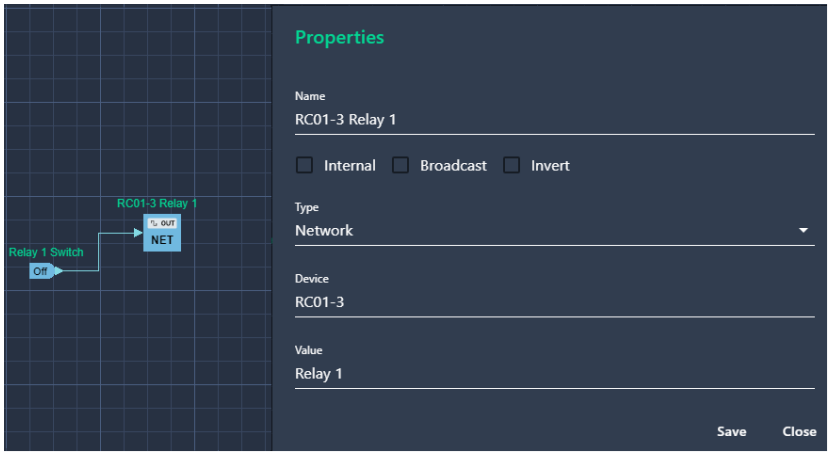
This information will then appear in the TDB programs Inputs or Outputs tab (unless set to Internal).

Note:- The Air Quality Wall and Duct sensors are currently not supported.

Controlling RDM Bluetooth Device Outputs

To control an output on one of the connected Bluetooth devices, the user would use a Digital Out block. In the example below the TDB program will control Relay 1 of a connected monitor device.

Type This must be set to 'Network'.
Device Enter the controller's name as it appears in the device list e.g. 'RC01-3'.
Value Enter the input you would like to pick up, making sure the name matches exactly the same as on the item is displayed (including upper- and lower-case characters)



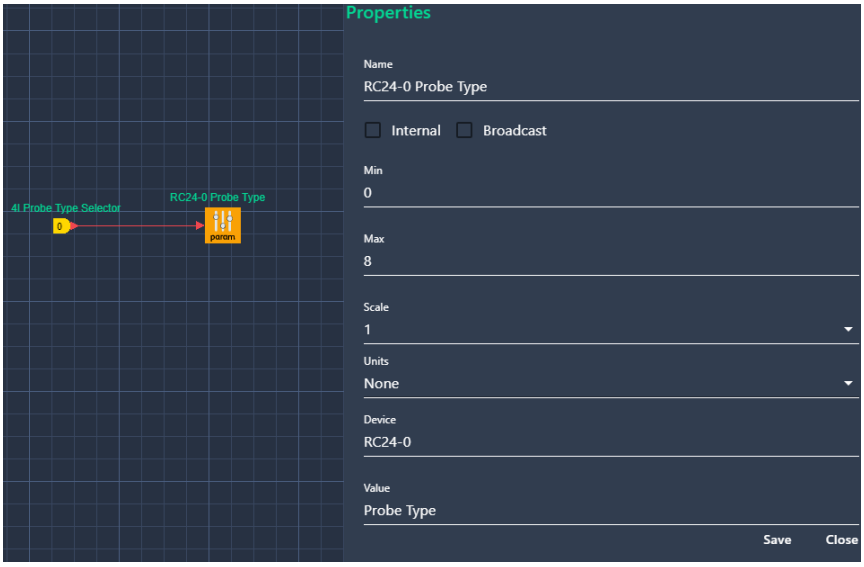
Once the TDB program has been saved and running on the DMTouch or miniDM and the monitor is logged on then the configured relay output can be controlled via the TDB program.

Setting Parameters on an Networked Device

The user can also use the TDB program to change parameters of any of the networked devices. This can be achieved using a NW Param block. In the example below, the user would be able to change the probe type being used on the networked device.

The block must be set up similarly to below: -

Device Enter the controller's name as it appears in the device list e.g. 'RC24-0'.
Value Enter the parameter you would like to change, making sure the name matches exactly the same as on the parameter item s displayed (including upper- and lower-case characters)



Note: The Nw Param block is designed for occasional use and must be used with caution. RDM and third-party products can accept a finite number of parameter changes. Parameter information resides in the on-board non-volatile memory for a device. If the maximum number of memory writes are exceeded it will irreversibly damage the device. This type of failure is not covered under the RDM 5 Year warranty. For third party devices please refer to the respective manufacturer.

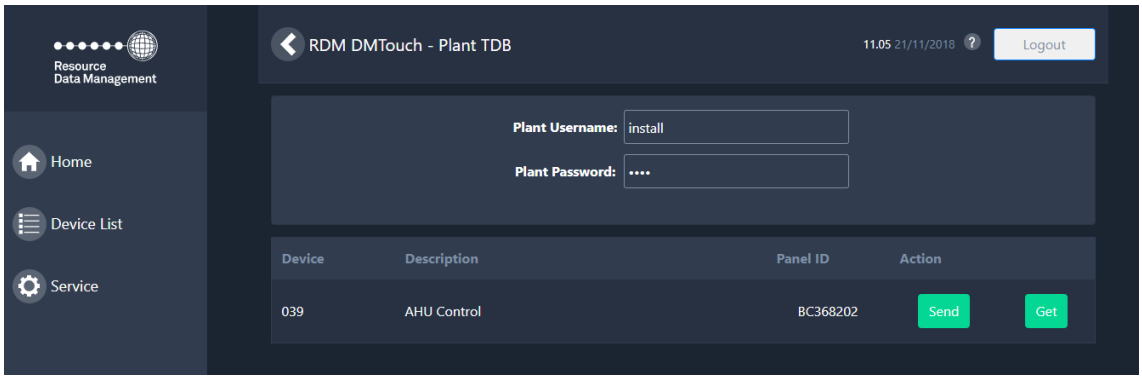
TDB Application Note

DMTouch TDB and Plant Controller TDB application software may not always have the same features or functionality at any given time. Please refer to the relevant user document to confirm what blocks and features are present for a particular software version.

Care should be taken when using a more modern version of TDB editor to create a TDB program for a DMTouch using an older version of TDB editor i.e., selecting a block found in the most modern editor and trying to use it in a version of the editor which doesn't have that block as an option. This will have adverse effects.

Plant TDB Upload/Download

From the Service Menu select: Devices/ Plant TDB Upload/Download

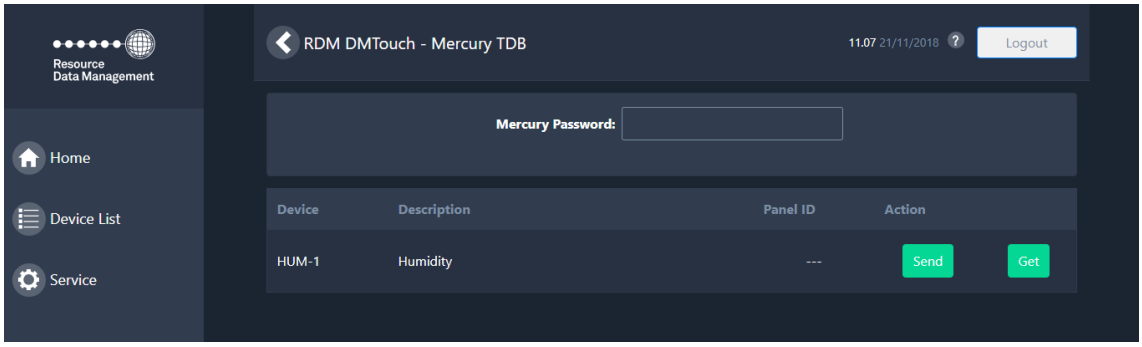


Use this feature to upload or download a TDB file to either a Plant TDB or Intuitive TDB Controller that is logged on to the DMTouch. Enter the device's user name and password in the fields provided. Then use the 'Send' or 'Get' buttons to upload or download the program to the device. Only devices that are currently online will be displayed here.

Note: the user's name and password are the same credentials to enter the device's web page menus.

Mercury TDB Upload/Download

From the Service Menu select: Devices/ Mercury TDB



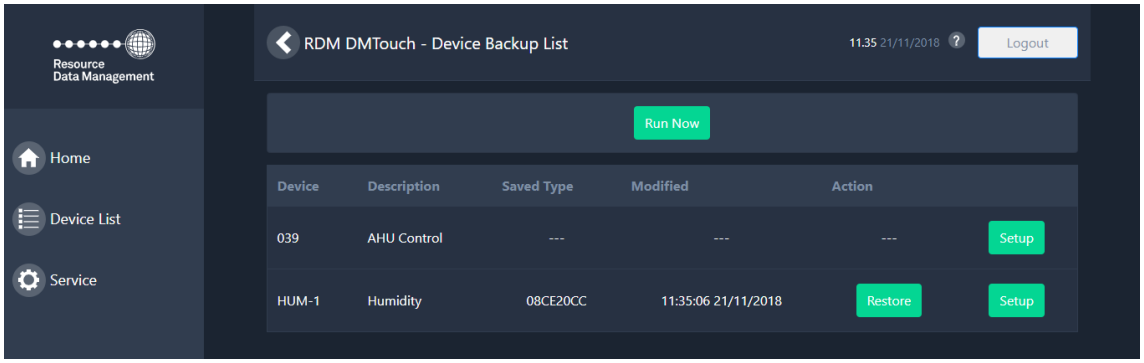
Use this feature to upload or download a TDB file to a Mercury Intuitive TDB controller that is logged on to the DMTouch. If the TDB file within the device has no associated read/ write password, leave the 'Mercury Password' field blank. Where the TDB file is to be downloaded, enter the 'read' password and click 'Download'. Where a TDB file is to be uploaded to the device, enter the 'write' password and click 'send'. Only devices that are currently online will be displayed here.

Note: For the TDB to be sent to the Mercury controller via the DMTouch, the program must be in the binary (.btdb) format.

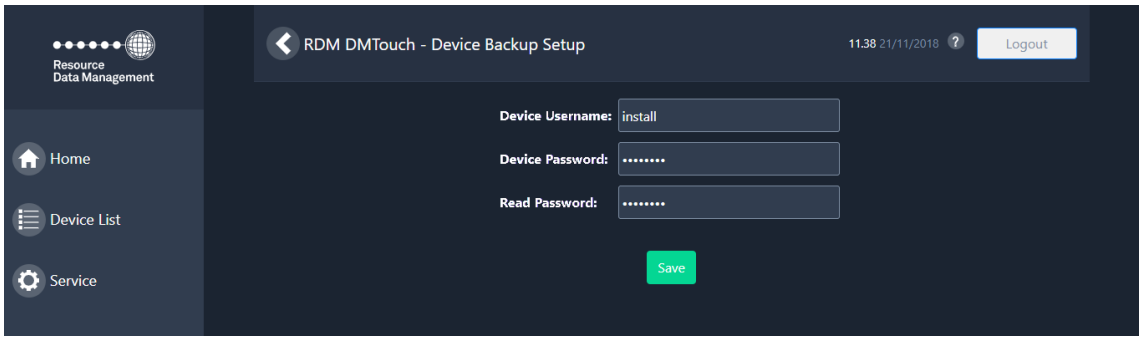
Device Backup

From the Service Menu select: Devices/ Device Backup

This feature allows for backups of TDB devices to be stored within the DMTouch. Where there are Mercury TDB or Plant TDB devices logged on to the DMTouch, this feature can be used to backup and restore, where necessary, the TDB program from the device.

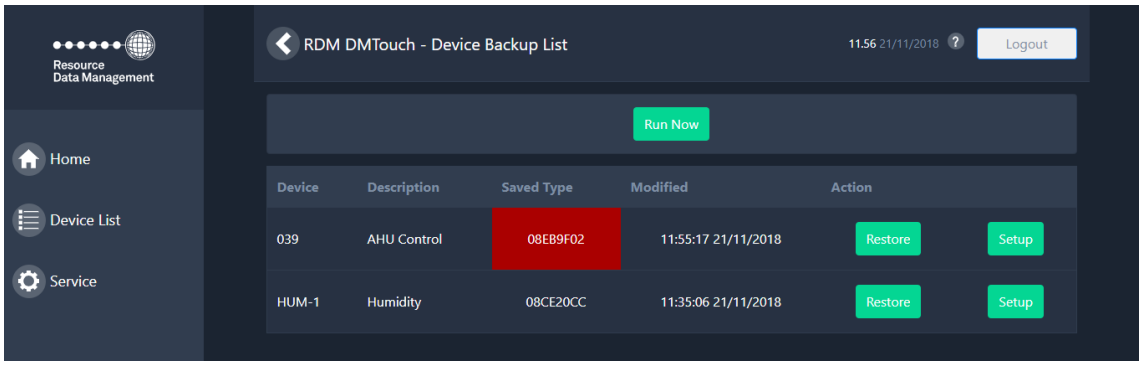


When the user enters the Device Backup page, it will list all 'TDB Devices' logged on to the DMTouch which are available to use the feature with. Along with the device ID and description it will also detail the last saved 'type' and date it was saved. If the feature has never been setup, these details will be blank. To setup, click on the 'Setup' button next to the device. A page similar to below page will be displayed. **Note:** The Mercury platforms will only show the 'Read Password' field;



If the TDB program requires a read password, enter it here, if not ensure the field is left blank. Once entered, click 'save'. The result will show the main Device Backup list again. **Click on 'Run Now' to perform the backup** so the current TDB program is saved. The type and modified date details will now be filled in.

If the TDB program has been changed and as a result, differs from the saved TDB program, the DMTouch will highlight the type field in red.



In the example where the current type (TDB program) differs from the saved version, the user has the option to start the setup process again and save the 'altered' program as the new Backup. Or the option to 'Restore' will be available. Clicking this option will prompt the user for a 'Write' password before overwriting the TDB program on the device.

Note: use with caution, as restoring the program will overwrite all previous changes.

CPT Setup (Calculated Product Temperature)

From the Service Menu select: Service/ Devices/ CPT Setup

This page allows the user to configure and adjust the factors used to calculate the various CPT product options.

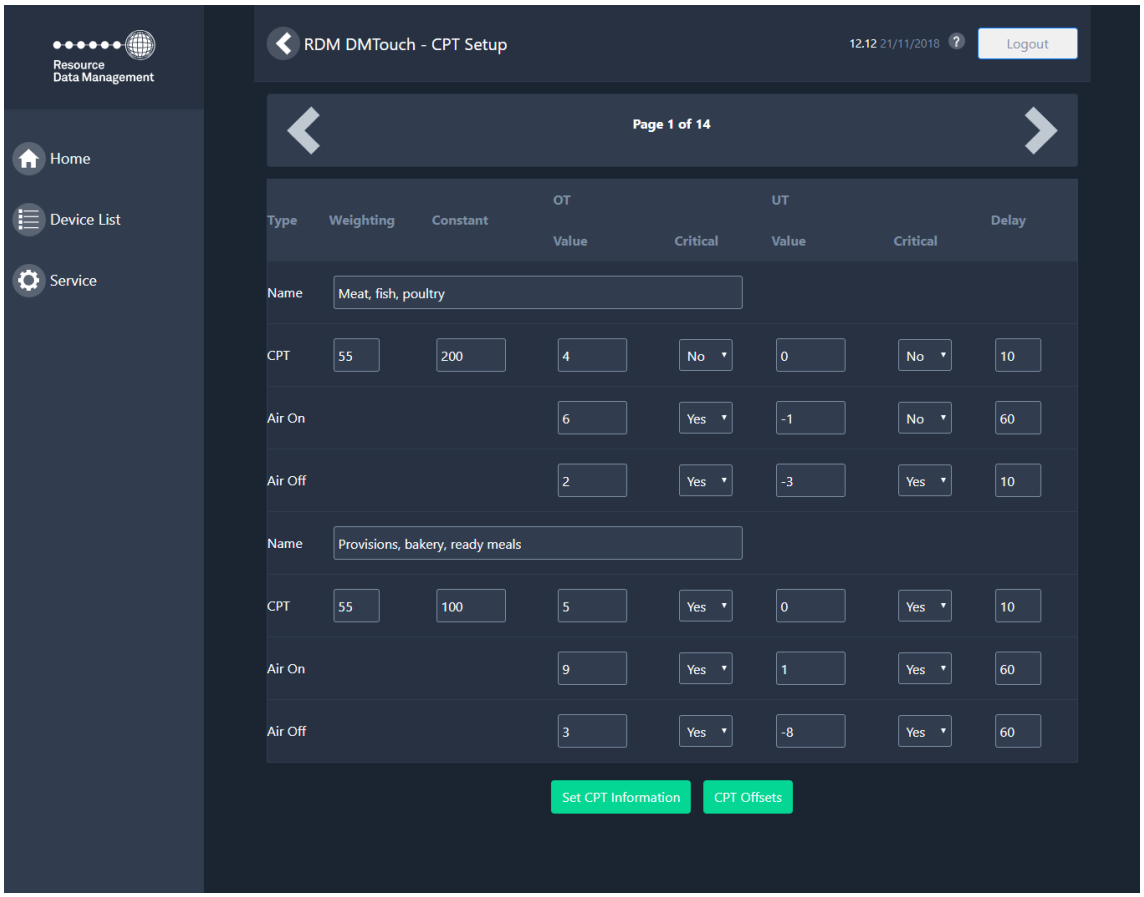
The Calculated Product Temperature is calculated using a mix of the air on/off probes from a controller in conjunction with a time constant. The CPT value generated is an estimated value only and may not accurately represent the actual product temperature in the case as it can be affected by a number of variables such as probe position, refrigeration case characteristics etc.

Use the CPT Setup page to 'calibrate' the feature to a specific case and site setup. When the DMTouch is restarted the CPT calculation uses the last known value for each case as a starting point, providing the saved value is no more than 1 hour old. If older than 1 hour the default value used for the initial CPT calculation is halfway between the UT and OT Alarm limits. The ability to manually default the CPT value on a device-by-device basis is available via the WebServices feature only. When initiated CPT calculation will be reset and will be halfway between the UT and OT Alarm limits. When a case CPT type is changed on a device the CPT parameters will default to the CPT type selected.

When CPT is enabled a further nine parameters appear for the enabled device, these are:

CPT Over temp.	Air On Over temp.	Air Off Over temp.
CPT Under temp.	Air On Under temp.	Air Off Under temp.
CPT Alarm Delay	Air On Alarm Delay	Air Off Alarm Delay

The Air on and Air off probes of a device are used to generate over and under temperature alarms.



Name Enter a description for the desired CPT product type.

Weighting Percentage of the Air-On temperature that is used to calculate the CPT. The remaining percentage will be Air-Off temperature. Example, a weighting of 30% would result in CPT = 30% Air-on + 70% Air-off.

Constant The value used in the CPT calculation to generate CPT's for varying product types such as Meat, Fish, Dairy etc. For further information on CPT please contact RDM Technical Support. The sample screen shot above shows the factory default settings.

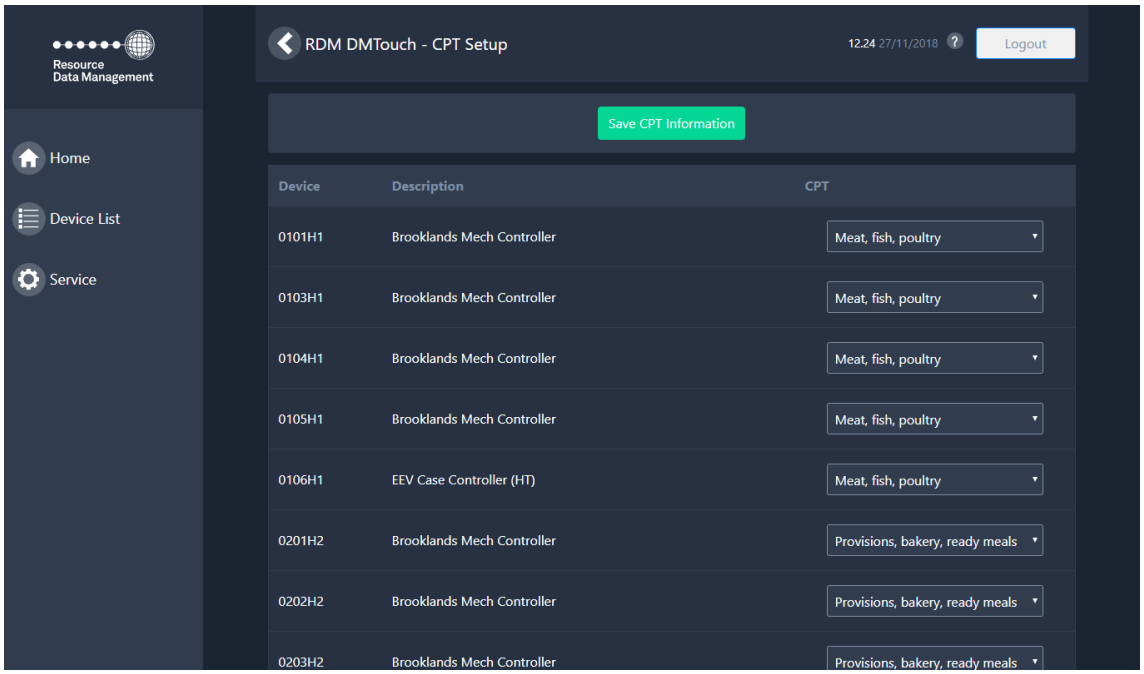
OT/UT Value The Over Temperature or Under Temperature alarm limit assigned to a CPT product. **Note**: an OT or UT alarm event can be triggered from either the CPT value or the Air On probe or

	the Air Off probe temperature. Setting the limit to 99 or -99 will disable the alarm for that temperature source.
OT/UT Critical	CPT alarms which are set as non-critical generate alarms with the text "non-Critical" in the alarm message.
Delay	The alarm delay applied to an OT and UT alarm for a given CPT product.

Device CPT

From the Service Menu select: Service/ Devices/ Device CPT

The Device CPT section allows the user to assign CPTs, previously setup in the CPT Setup, to specific devices.



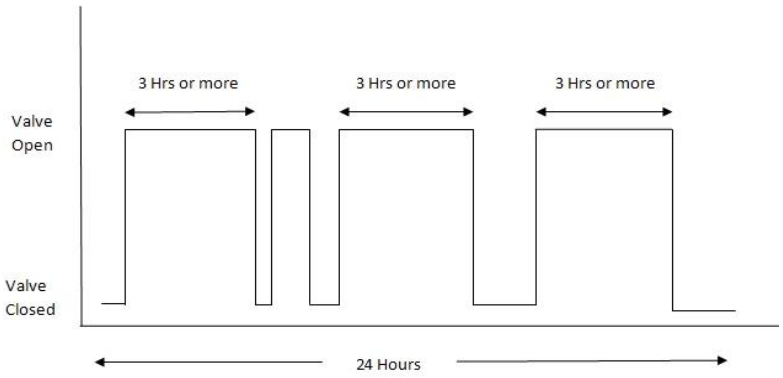
TD Value

When enabling CPT for a given device a further item 'TD Value' will appear in the Device values page along with supplementary parameters for the controller.

This TD Value is the temperature difference between the Air On and Air Off probes. There is a high and low alarm limit and each has its own alarm delay. When the TD rises above the high alarm limit and the delay has expired an alarm will be generated. When the TD drops below the low limit and the delay has expired then an alarm will be generated. High limit alarm index number is 11 and the low limit number is 12. For EEV control there is also a Superheat alarm. The feature generates an alarm when the superheat rises above the Superheat High parameter. When enabled an additional alarm setpoint and delay parameter appear.

Valve Open Too Much

This feature is enabled when a CPT is assigned to a controller and a valve state is available from the controller. In the parameters for the warning there is an open count and open length. If the valve is constantly open for the open length for the count number of times in 24-hour period, then you get valve open too much alarm.



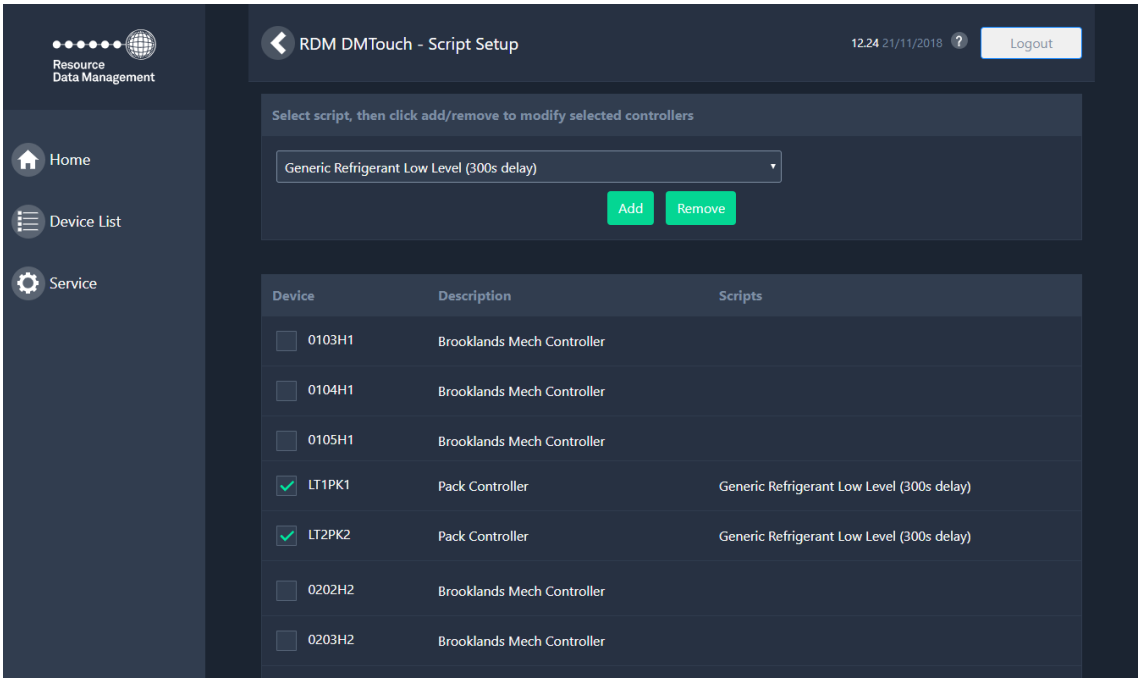
Example: If the valve is continuously open for 3 hours, 3 times in the last 24 hours then you will get this alarm. Similarly, if the valve is continuously open for 9 hours in one period you will still get this alarm as this counts as 3 x 3 hour periods.

Script Setup

From the Service Menu select: Devices/ Script Setup

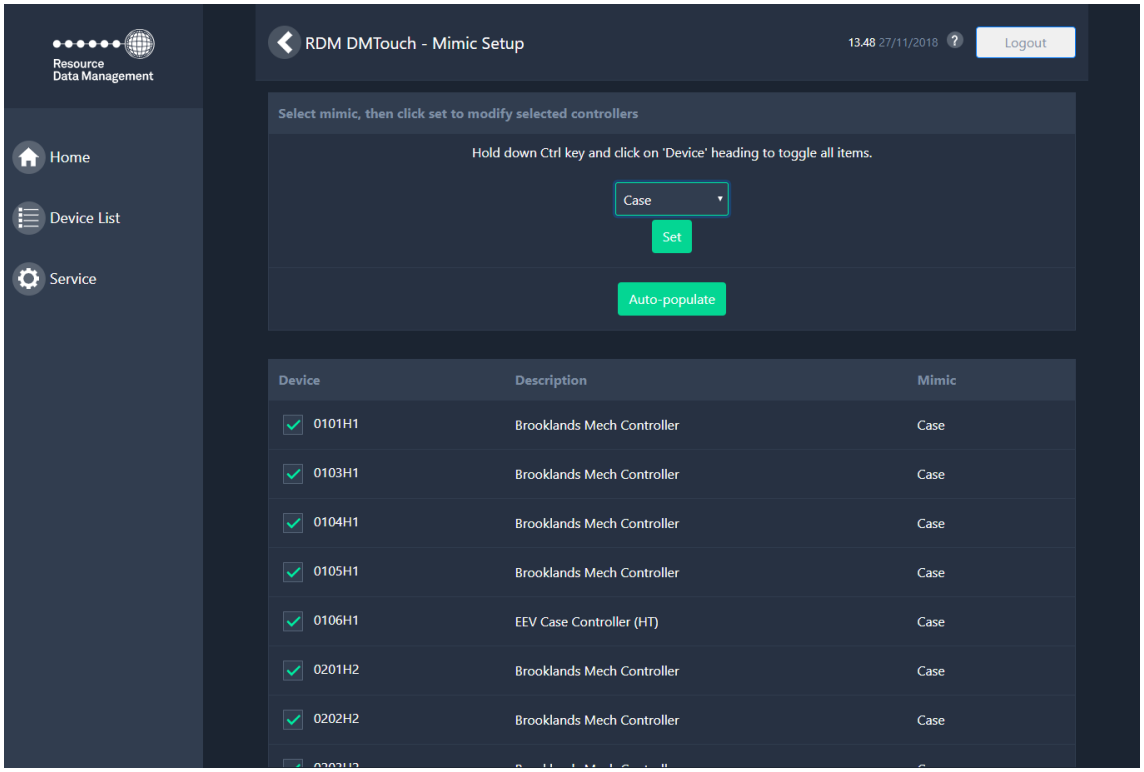
This feature allows the user to assign selected 'scripts' to devices. These scripts monitor specific items within logged-on devices and can generate alarms on certain criteria. For more information, please contact RDM Technical Support or an RDM accounts manager.

Note: This feature is not required on RDM devices and is required for a handful of third-party devices.



Mimic Setup

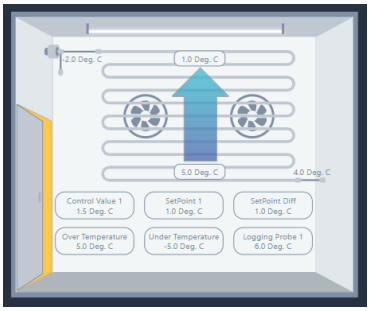
From the Service Menu select: Devices/ Mimic Setup



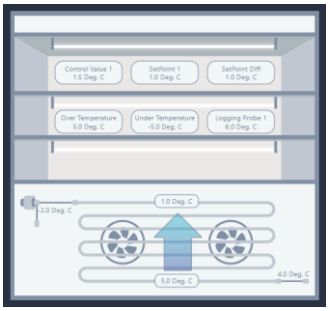
From within the Mimic Setup page, the user can configure mimic diagrams on a device-by-device basis. Mimics are used to provide a graphical overview for a device using 'real-time' data.

There are a number of standard Mimics that can be configured including; Case, Coldroom, Probe, Energy Meter and Gauge. Once configured they will appear under the 'Mimic' tab within the selected device. The standard mimics are shown below.

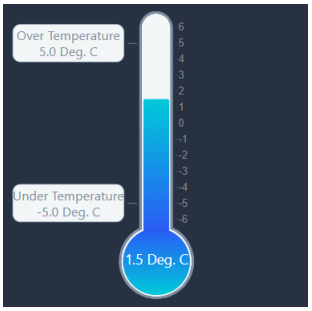
Coldroom



Case



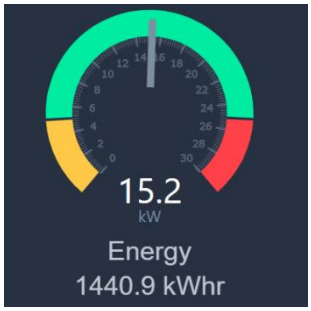
Probe



Gauge



Energy Meter



Please ensure all power is switched off before installing or maintaining this product.

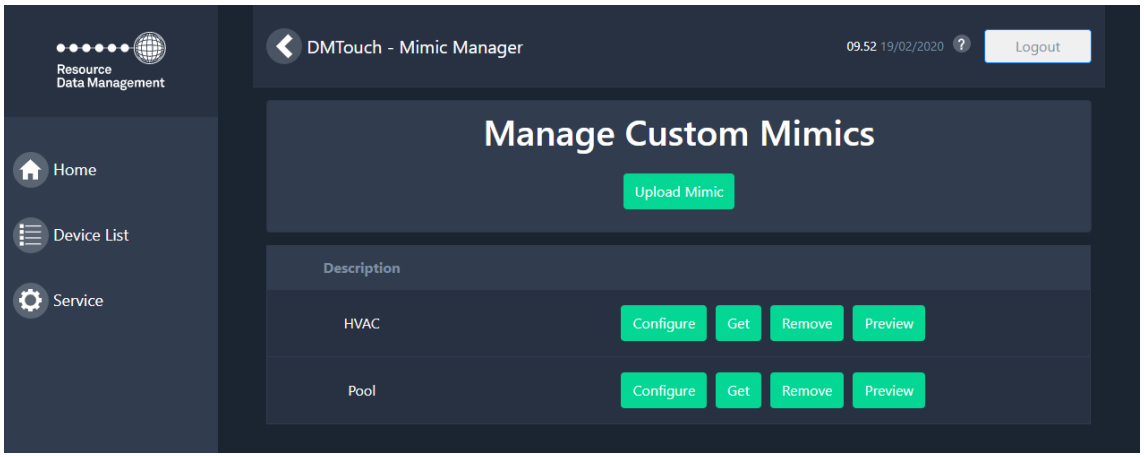
To assign a mimic to a device firstly select the mimic from the drop-down menu, select the device(s) by checking the box next to it within the list (shown above) and press 'Set'. The mimic column will update to show its associated mimic.

Alternatively, the user can use the 'Auto-Populate' button. The system will use the device itself to automatically match any mimics, for example any 'Case Controllers' will be assigned 'Case', 'Energy Meters' will be 'Energy Meter' etc.

The feature holds a number of standard mimics as outlined above, however when a user has created their own mimics and uploaded them using the Manage Custom Mimics feature, they will also be listed in the drop down for selection.

Manage Custom Mimics

From the Service Menu select: Devices/ Manage Custom Mimics

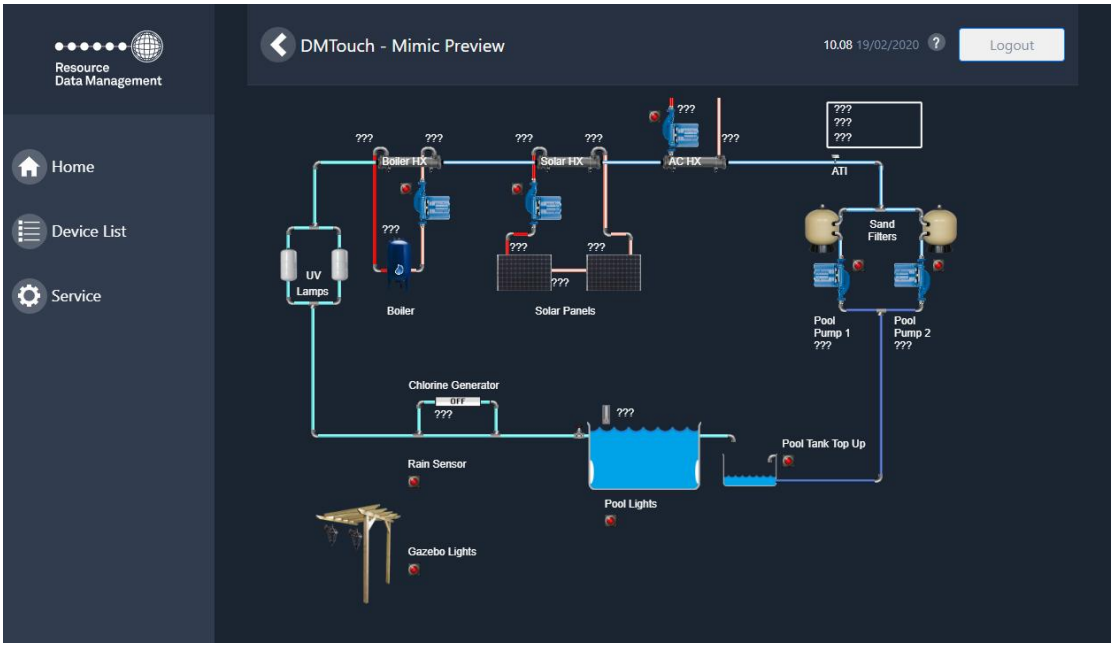


Users can create their own mimics using the RDM Layout Editor* and associate them to specific devices (as outlined in the Mimic Setup section). For details on creating mimics or layouts please see documentation on Layout Editor available to download from the RDM Website.

*__Note__: The RDM Layout Editor is a free software package and can be obtained on request from RDM.

Once a custom mimic has been generated, the *.le2 file can be uploaded to the DMTouch using the 'Upload Mimic' button as shown in the above screen capture. Following its upload, it will be listed in the table of custom mimics with general options.

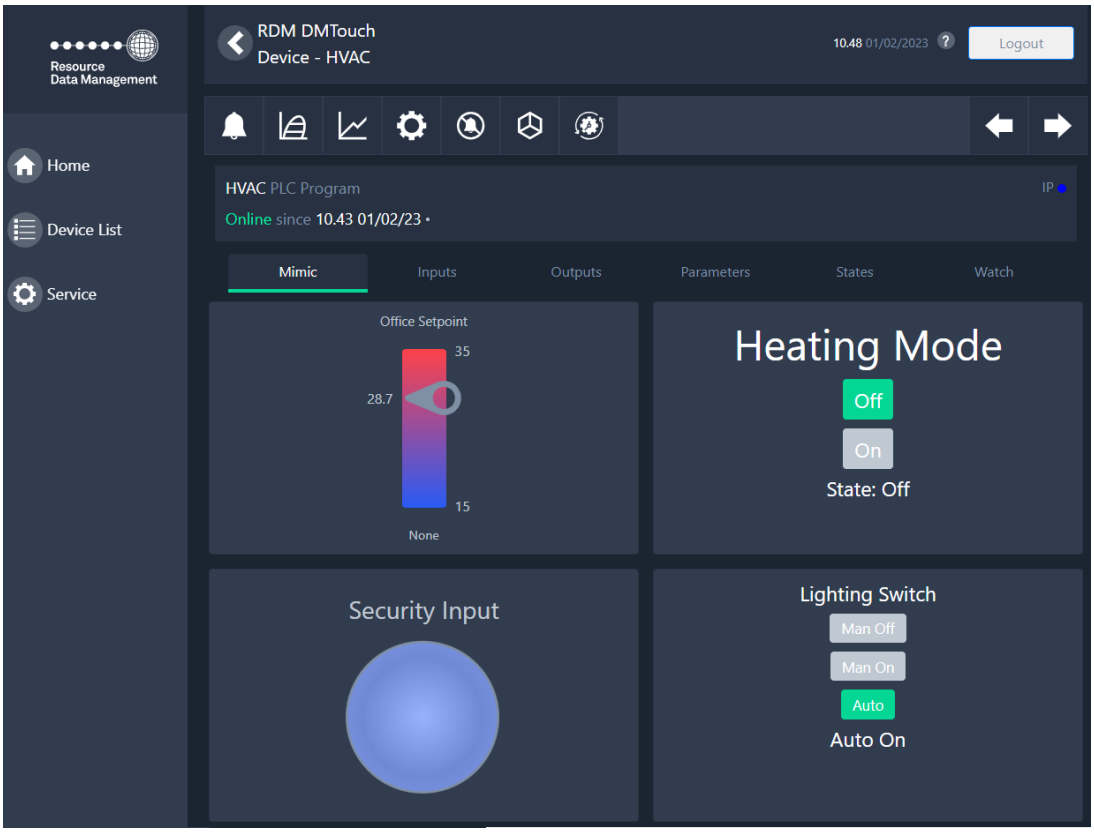
Configure	Allows the description of the mimic to be amended
Get	Downloads the mimic from the panel to the users local PC.
Remove	Deletes the mimic permanently. **Note**: this cannot be undone.
Preview	Allows the user to view the mimic. An example is on the next page.



Once the mimic has been uploaded and assigned a description it will then be listed in the drop-down menu within the Mimic Setup page.

Intuitive Plant Custom Mimics

Both mimics and layouts can be configured on RDM Intuitive devices. When these units are logged on to the DMTouch their home page (layout **or** mimic) is automatically assigned as the mimic when viewed on the DMTouch's device list. **Note**: Only compatible with Intuitive Plant TDB V4.3 and above.
Note: Layout will take priority over the mimics.

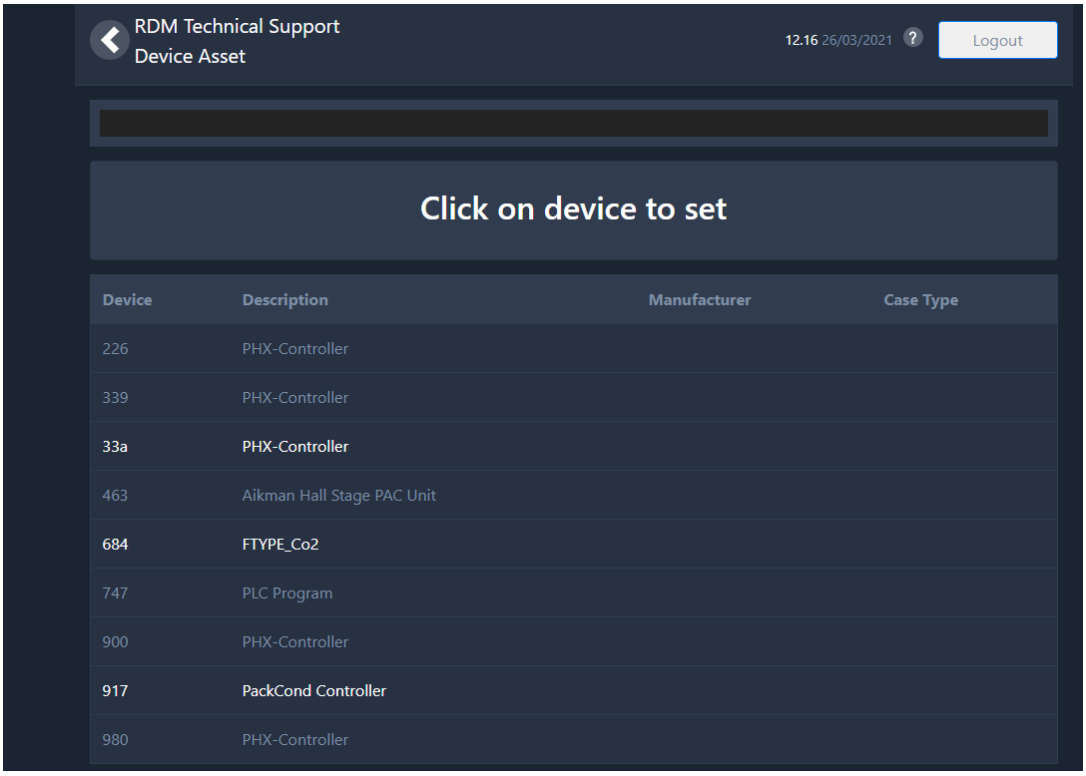


Show Asset

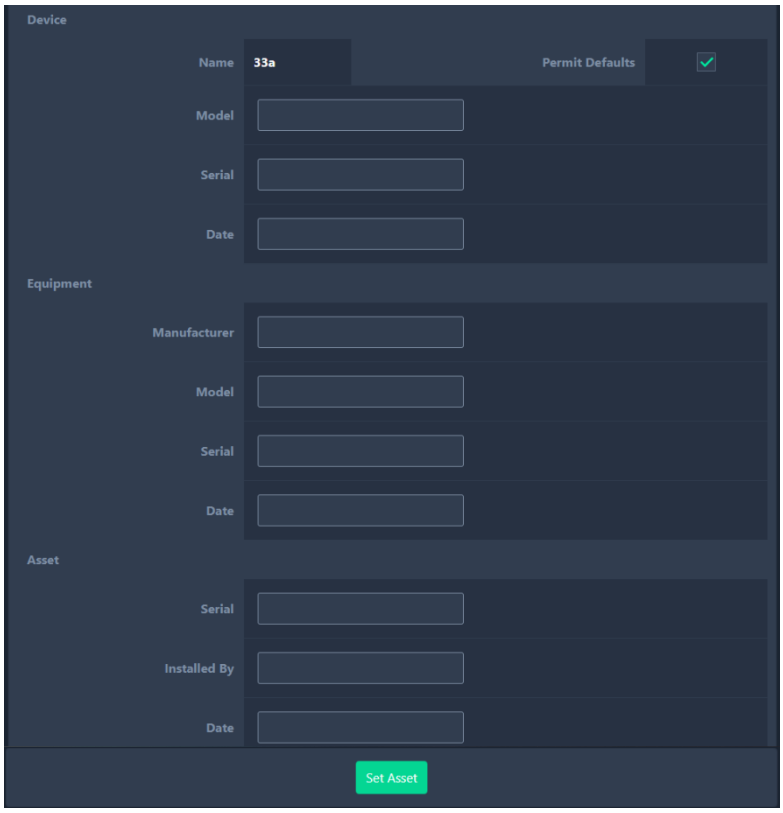
From the Service Menu select: System/ Devices/ Show Asset

This allows a device to be set up to be used in conjunction with the default parameters section of the DMTouch.

From the below screen, click on the device which is to be set. Only devices which are currently online can be set.



From here the screen to the right will be displayed.



The Manufacturer and Model fields within Equipment are those which the DMTouch will use in order to retain the default parameters. These could be set to the manufacturer name and case model number in order to identify the installed device and save parameters against that device. All other fields are for information only and can be utilised by the user to further identify devices as they require.

The Permit Defaults checkbox either enables or disables the use of the default parameters function for the device, after the Manufacturer and Model fields within the Equipment section have been set.

Note: The default parameters function is currently only supported with RDM controllers via IP communication.

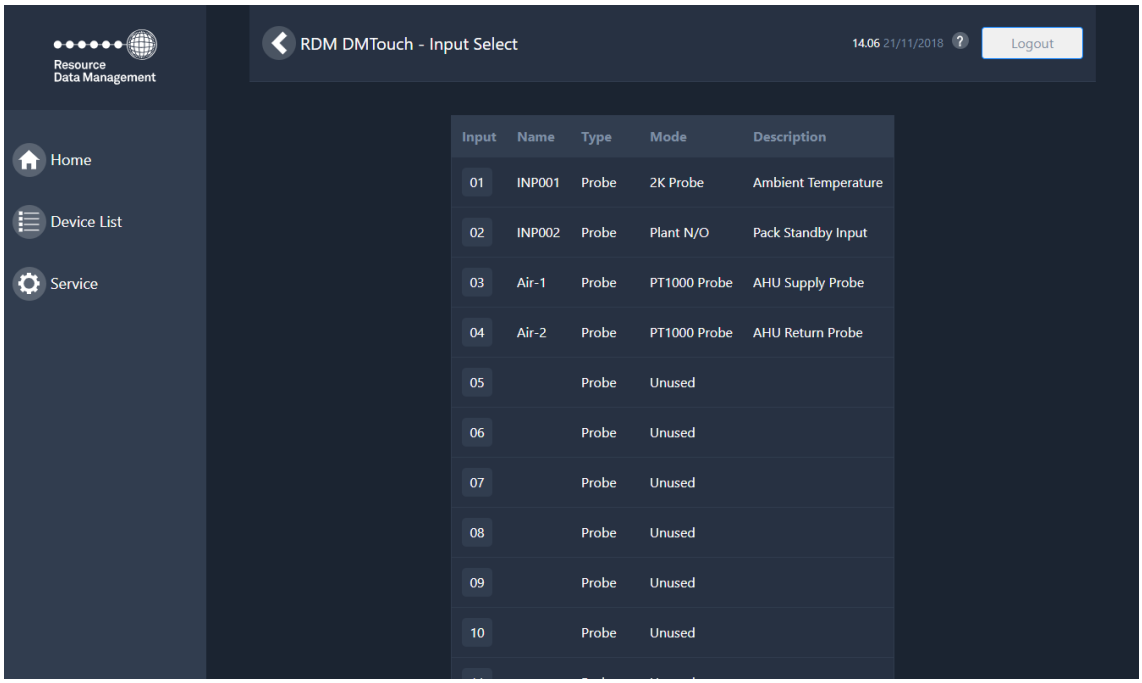
System

Local I/O

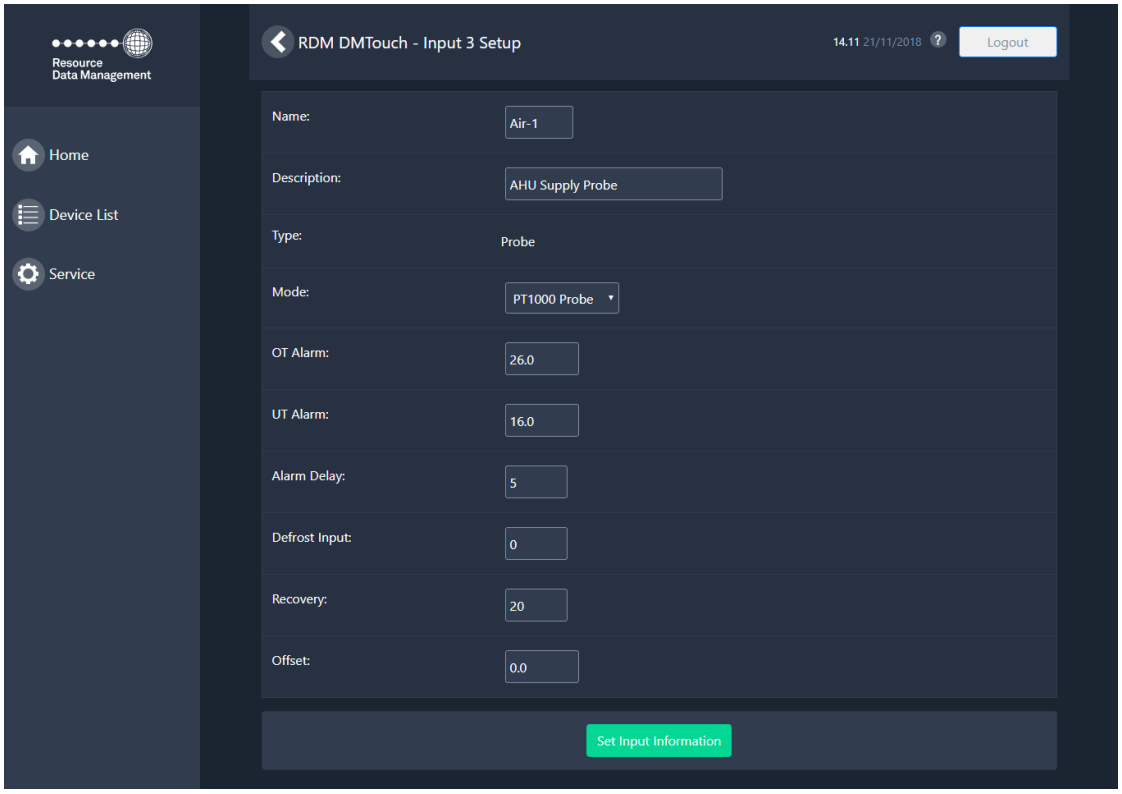
Inputs Setup

From the Service Menu select: System/ Local I/O/ Input Setup

The Base model of DMTouch has 12 analogue inputs, these can be used for a variety of probe types, as well as plant or defrost inputs. In addition to these 12 inputs, there are 3 expansion board positions. A variety of input boards are available to expand the default IO of the DMTouch. It will automatically recognise what board has been used and display the available inputs on the Input Setup. Please see Appendix 3: Related Part Numbers for the additional local IO available. The miniDM has 6 probe inputs that can be configured as above and 4 digital inputs that can be used as defrost or plant inputs. Input Setup Page will look similar to the below.



To setup an input, click on the Input Number, the setup page for that input will be displayed. An example of an input setup screen is below. In the example, a PT1000 probe input has been selected from one of the DMTouch's 12 analogue inputs.



The above image shows an example of the setup page for one of the probe inputs.

Name:	The alias of the input as it will appear in the Device List. Maximum of 6 characters.
Description:	A description of the input. Maximum of 32 characters.
Type:	This indicates the type of daughter board the input is on. E.g., Probe, 4-20mA etc.
Mode:	Select from the drop-down menu; probe type; Defrost Input or Plant Input.
OT Alarm:	When set to a probe, set the Temperature that will generate an Over Temperature Alarm.
UT Alarm:	When set to a probe, set the Temperature that will generate an Under Temperature Alarm.
Alarm Delay:	The time delay for when an alarm is generated.
Defrost Input:	Insert the local IO number of the dedicated 'Defrost Input'. Note the Input that is used must be set to 'Defrost' mode within its own setup.
Recovery:	Time permitted for the probe reading to recover following the defrost input switching 'Off'.
Offset:	Insert a temperature offset, if required, to account for long cable runs.

Probe Input

When configured as a 'Probe Input' it will allow for the monitoring with over and under temperature alarms including an alarm delay.

The Input temperature range is from **-99 Deg Celsius** to **+350 Deg Celsius** for PT1000 probes.

Defrost Input

An Input can also be configured as a defrost input –a probe input can then be assigned this local input number as its 'Defrost Input'. When the defrost input is active, alarms are inhibited for the temperature probe input until the defrost input is deactivated. Temperature alarms are enabled once the recovery parameter expires.

Plant Input

Inputs can also be configured as a Normally Open or Normally Closed plant fault input with alarm delay.

The DMTouch fixed inputs have default alarm index numbers of: -

Configured as a probe input:	Probe Fault	6
	Probe OT	4
	Probe UT	5
Configured as a plant input:	Plant Fault	3

Probe Types Supported

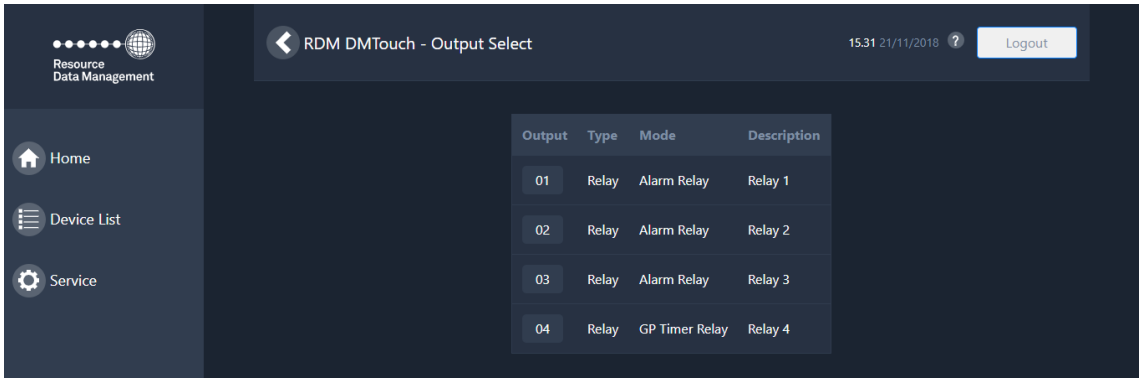
The below probe types are supported:

PT1000, NTC2K, 470R, 700R, NTC3K , NTC2K25, 100K, 5K, 6K, NTC10K & NTC10K(2) USA

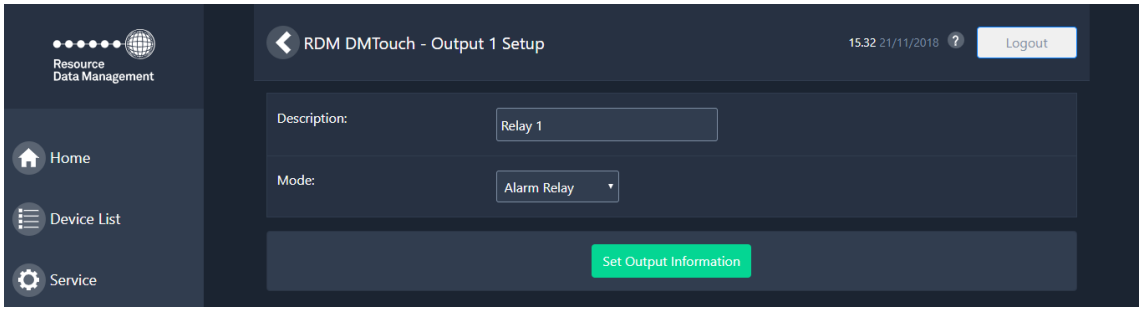
Outputs Setup

From the Service Menu select: System/ Local IO/ Output Setup

This menu, allows the outputs connected to the DMTouch to be configured.



Select an output to change by clicking on the Output 'number'.



Select the mode required, enter a description for the output and click Set Output Information.

Mode options are:

GP Timer Relay	For use with a GP Timer channel.
Alarm Relay	Alarms can be directed to this output via the Alarm Actions.
Unused	Relay is available for use by the Data Builder program.

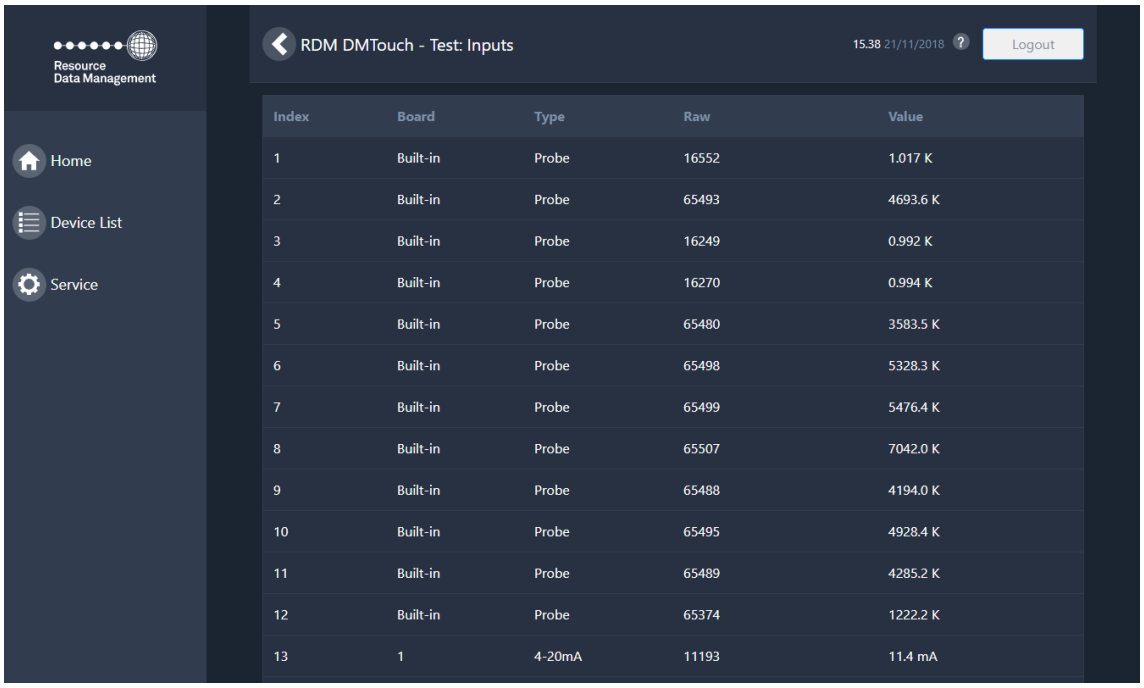
A variety of output boards are available to expand the default IO of the DMTouch. It will automatically recognise what board has been used and display the available outputs on the Output Setup. Please see Appendix 3: Related Part Numbers for the additional local IO available.

Note: There are 4 relays available on the DMTouch and 5 on the miniDM.

Input Information

From the Service Menu select: System/ Local IO/ Input Information

This screen provides the input information for the analogue inputs on the DMTouch. If Daughter cards are fitted then they will appear in the list also.

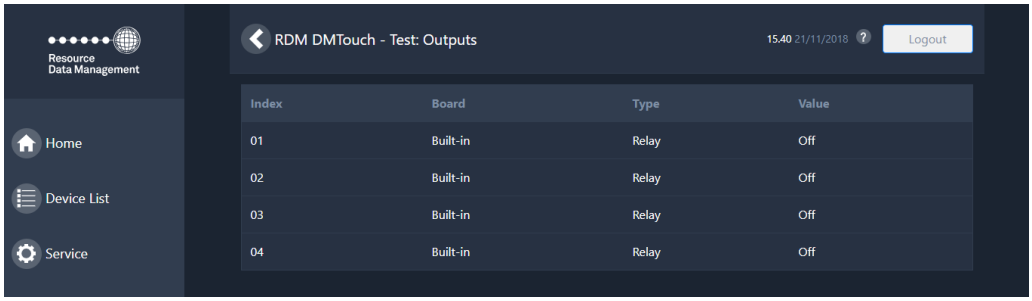


Index Unique number associated to the input position.
Board The location of the input. If 'Built-in' is shown it refers to one of the 12 analogue inputs that come as standard with the DMTouch. If '2' is shown, this would indicate Daughter Board position 2, equating to the middle Daughter board position on the right-hand side of the DMTouch.
Type The type of input configured. For example, 'Probe' is a resistive temperature probe input, '0-10V' is a 0-10Vdc input.
RAW This shows the raw count obtained from the A/D. Not normally required information.
Value The current status or value of the input. For example, a resistance is shown for a temperature probe.

Output Information

From the Service Menu select: System/ Local IO/ Output Information

This screen shows you the output information from the relays on the DMTouch. If Daughter cards are fitted then they will appear in the list also. The miniDM will also display the two PWM outputs which can be utilised via the TDB Editor software.

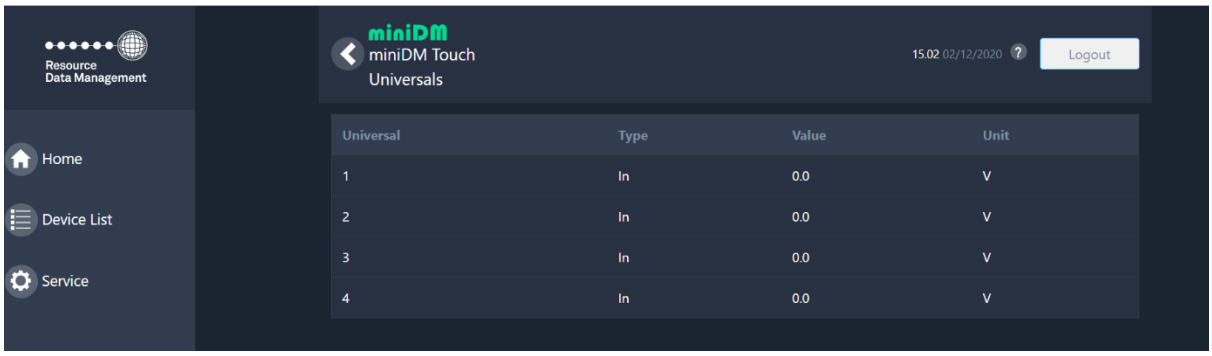


Index Unique number associated to the output position.
Board The location of the output. If 'Built-in' is shown it refers to one of the 4 outputs that come as standard with the DMTouch. If '2' is shown, this would indicate Daughter Board position 2, equating to the middle Daughter board position on the right-hand side of the DMTouch.
Type The type of output configured. For example, 'Relay' signifies the output is either on or off depending on the command it's given.
Value The current status or value of the output. For example, 'off'.

Universal Information

Note: This is for miniDM only
From the Service Menu select: System/ Local IO/ Universal Information

This screen displays the information for the Universal IO on the miniDM. These are available for use with a Data Builder program.

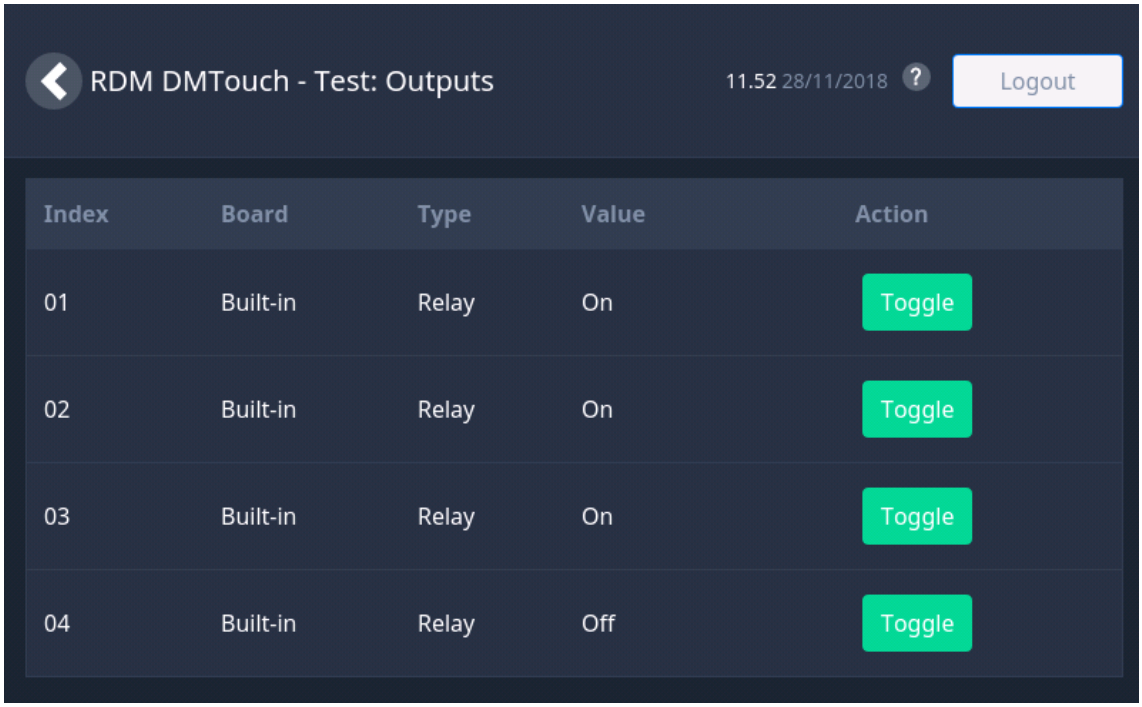


Universal Unique number associated to the IO
Type The type that has been configured, either an input or an output
Value The current value of the input or output
Unit Displays whether the IO is set for V or mA.

Output Test

From the Service Menu select: System/ Local IO/ Output Test

The Output Test Screen is only accessible from the DMTouch screen. Entering the menu, will show a similar screen to the below.



Note: Normal output control will be inhibited while on this page.

The table will list all available outputs for the user to test, this will include any additional daughter boards fitted (See Appendix 3: Related Part Numbers for more details). It will advise on the type of output, the board it's on and its current state.

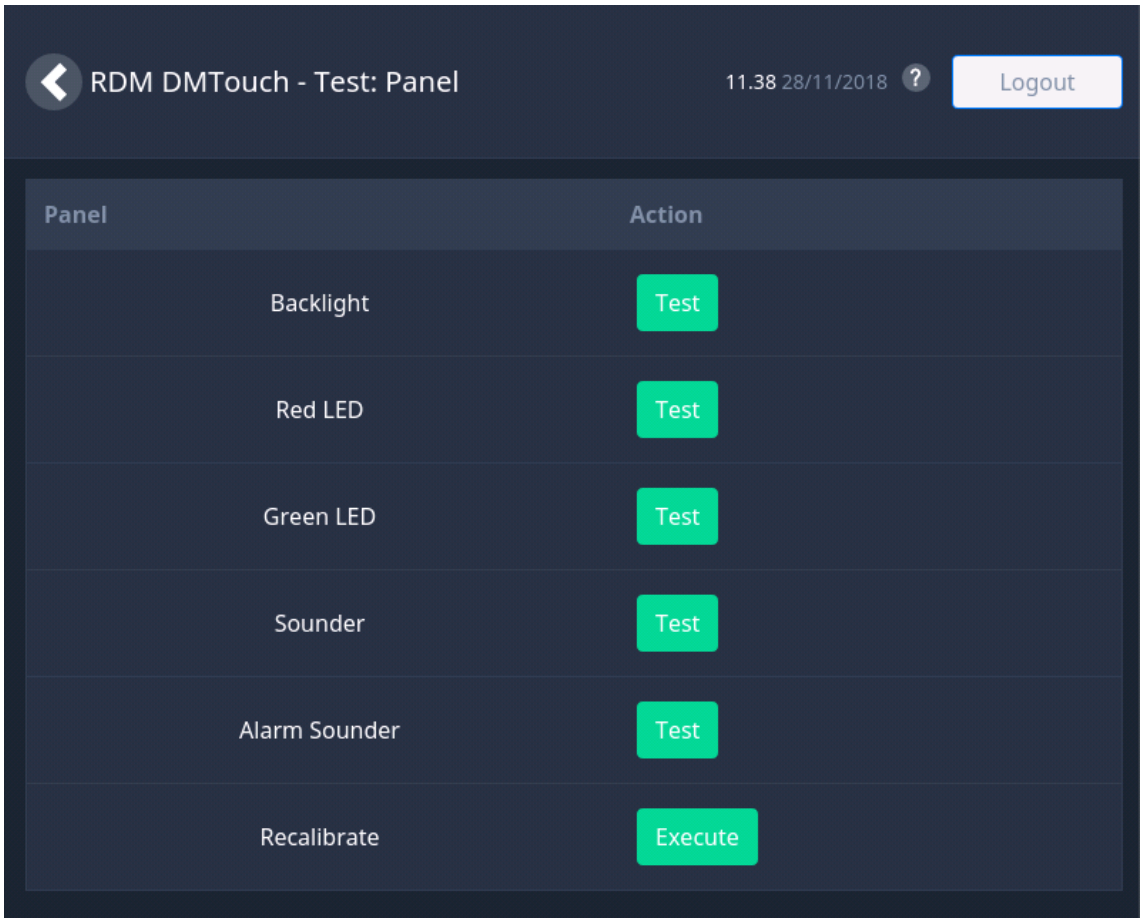
Use the 'Toggle' button to switch the output's state.

Note: Only in relation to DMTouch, not miniDM.

Panel Test

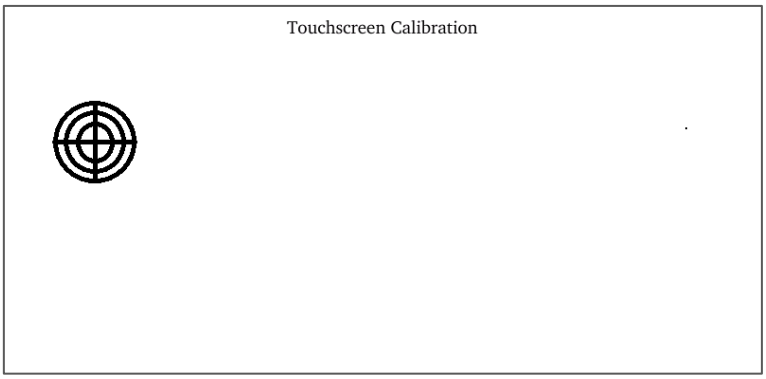
From the Service Menu select: System/ Local IO/ Output Test

The Panel Test Screen is only accessible from the DMTouch screen. Entering the menu, will show a similar screen to the below.



Listed will show all parts of the DMTouch panel that can be tested.

Backlight:	Pressing the 'Test' button will cause the DMTouch's to fade to off and back on 10 times.
Red/ Green LED:	Pressing the 'Test' button will cause the DMTouch's red or green LED to flash off and on 10 times.
Sounder:	Pressing the 'Test' button will cause the DMTouch's sounder to beep 10 times.
Alarm Sounder:	Pressing the 'Test' button will cause the DMTouch's Alarm sounder to sound out. The user must press the 'Test' button again to silence.
Recalibrate:	Pressing the 'Execute' button will allow the user to recalibrate the touchscreen of the DMTouch. It will show a number of crosshairs for the user to touch, similar to the below.

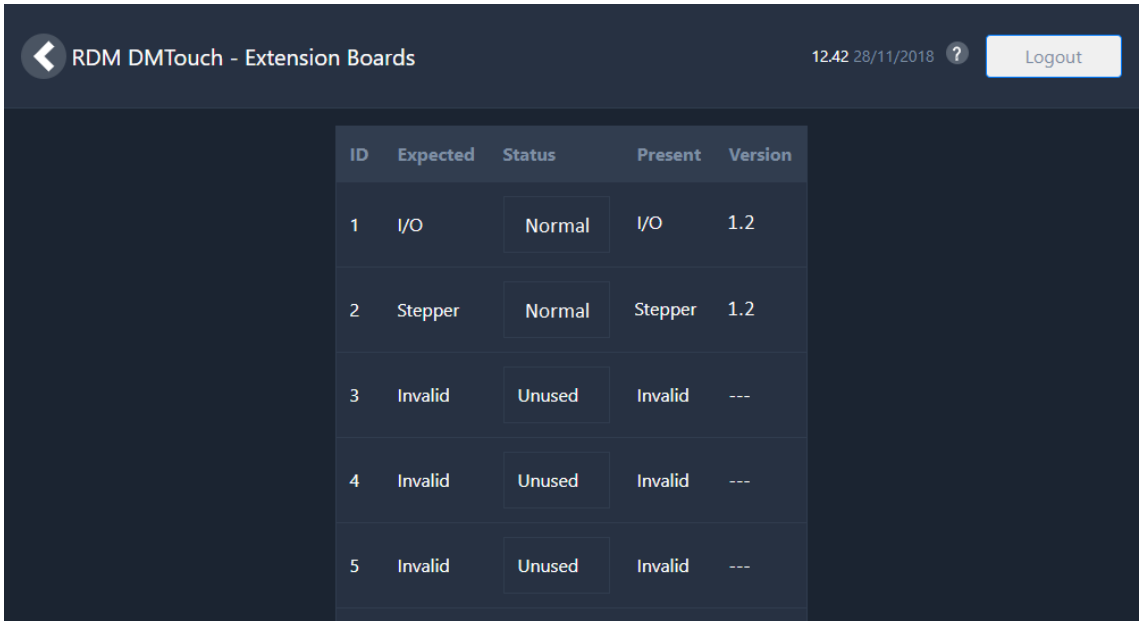


Note: Only in relation to DMTouch, not miniDM.

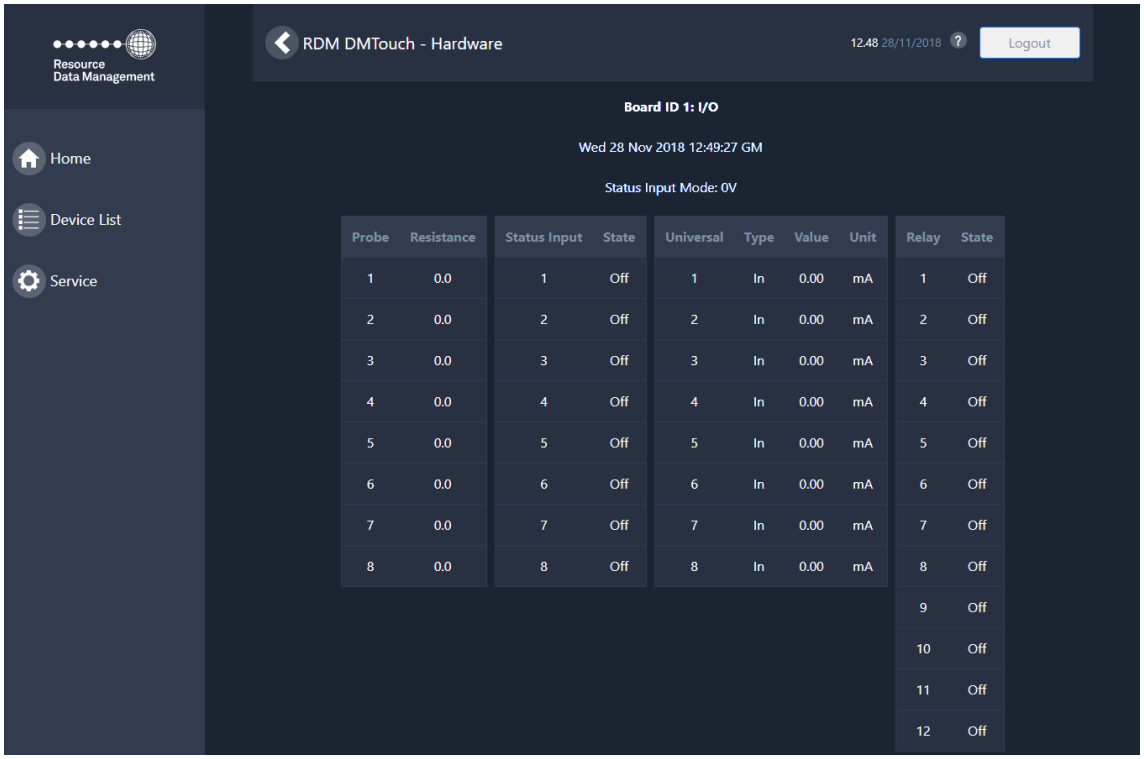
Extension Boards

From the Service Menu select: System/ Local IO/ Extension

Expansion boards can be attached to the DMTouch (Hardware dependant) via CANbus. The extra IO they provide can be utilised from within the TDB feature (PR0485). If expansion boards have been configured in the TDB program, the expected boards will be listed along with their status and versions, similar to below.



The user can further click into individual boards to see all associated physical IO.



Depending on the attached board, the physical IO will be listed with all the current values.

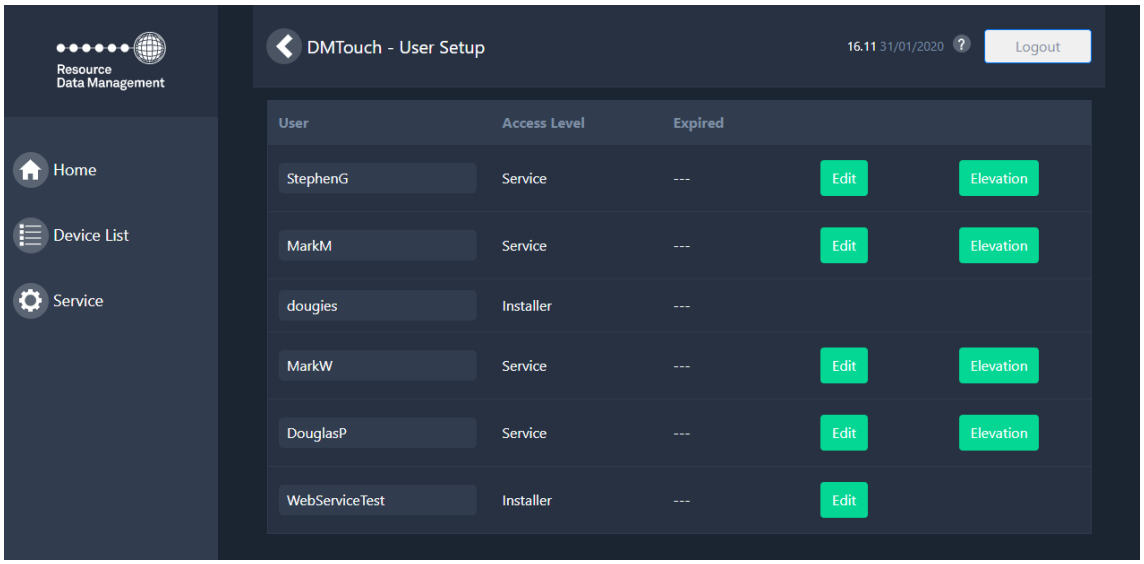
User Setup

User List

From the Service Menu select: System/ User Setup/ User List

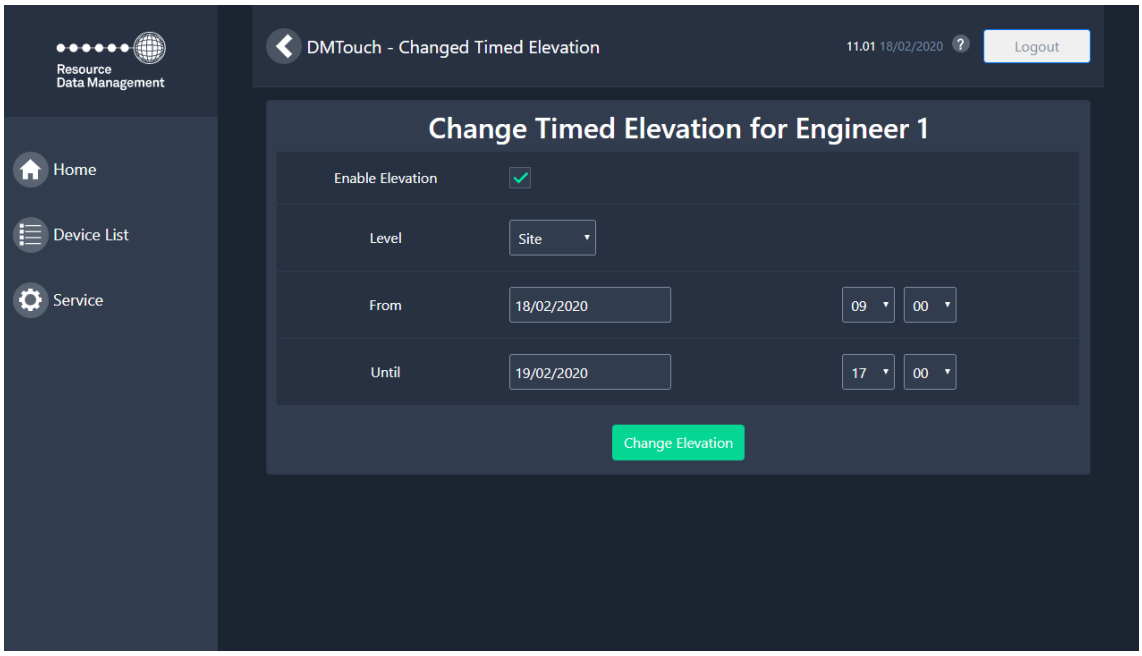
The user list provides details of all users who can access secure areas of the system. Details include; user name, their current access level, expired status with the options to edit and elevate access level.

Note: Users listed will only be of similar or lower access level to that currently logged in.



By clicking on the user name it will allow that User Name to be edited.

Elevation This allows the user to grant another user a higher access level for a predetermined time period. After that period has elapsed the user will be set to the original access level (Please see screen shot of setup below)

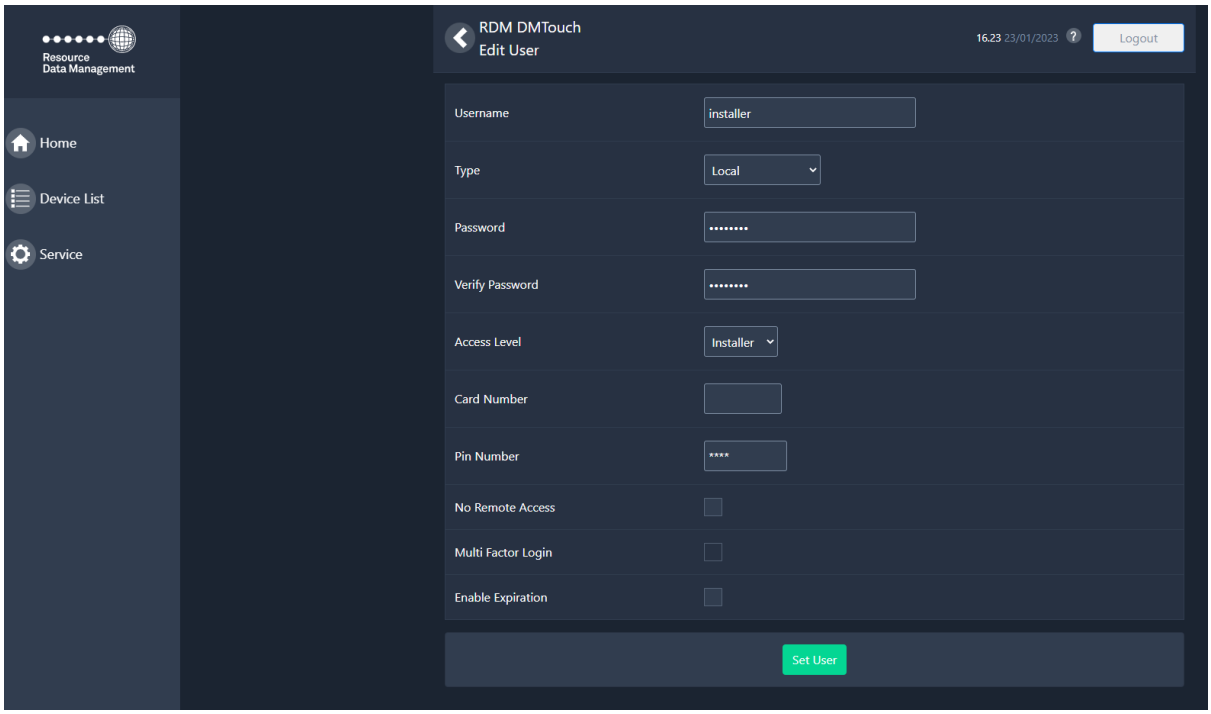


To amend details of a user, click on the 'Edit' button from within the User List page.

Note: Users setup for LDAP, Active Directory or RADIUS cannot be edited, only removed.

Edit User

Clicking the 'Edit' button will take the user to a page similar to below.



Username Enter a unique username for the user. This is required to log into the DMTouch and will show in logs who accessed, amended details, accepted alarms etc.

Type Select the type from the drop down, if not using one of LDAP, Active Directory or RADIUS then leave as local. See Authentication Setup for more details.

Password Insert the password to be assigned to the user. Used when logging in via a web interface or 'Panel login User/Password' within Site Setup is checked.

Verify Password Confirm the password entered.

Access Level The privileges the user has been given. Increased levels permit access to more functionality. The level can be altered for the individual user (installer, service or site). **Note:** Only users logged in with similar privileges can view users of the same level or below to make amendments e.g., if logged in at site level the user will not be able to view user accounts of a higher level. See Appendix 8 for menu access levels.

Card Number Optional–A swipe card can be associated to a user and can only be added using the front-End Panel (Touch Screen). The DMTouch must be fitted with a swipe system (PR0494) and 'Swipe Card on Orbit 1' must be checked in Site Setup. From the DMTouch screen, press in the field, then swipe a card with a magnetic strip. The card will be associated to that user.

Pin Number Enter a unique pin number a user uses to accept alarms or log in with when 'Panel login User/Password' (site setup) is unchecked.

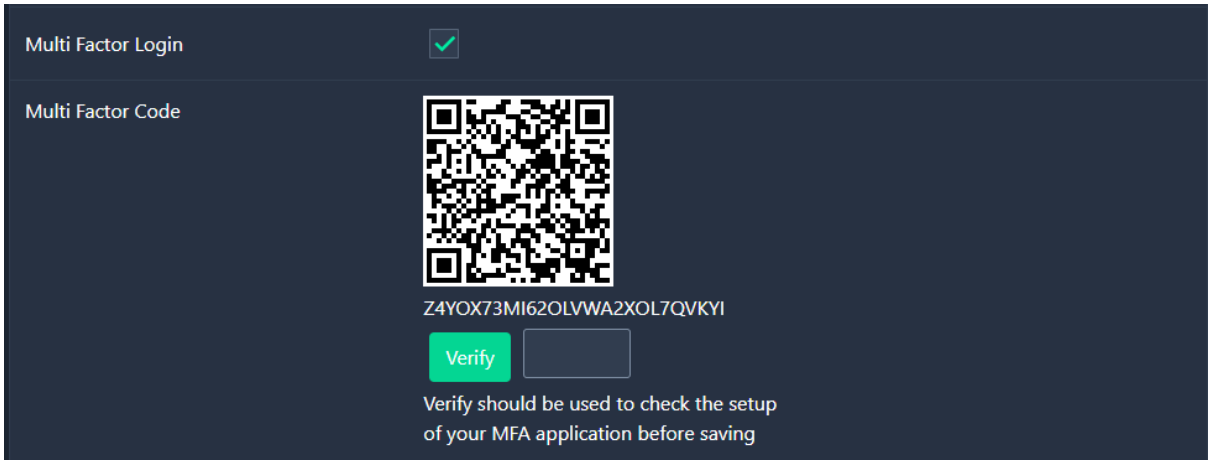
No Remote Access Will only permit the user to log on to the system via either the front panel or if accessing the unit locally using a PC, i.e. within the same IP subnet.

Multi Factor Login Ticking this mean the user will need to provide two verification factors to log in to the panel (see Multi Factor Login for more details)

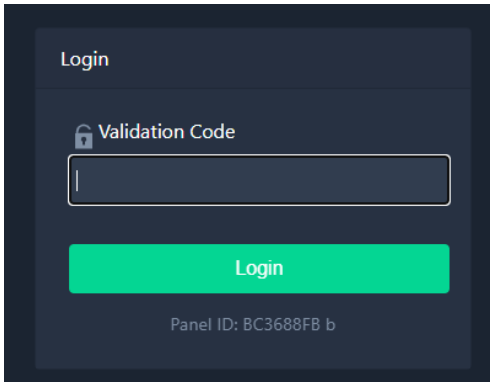
Enable Expiration Optional – tick the box to enable an automatic expiration date/ time of the user being added. The user can also automatically be removed by ticking 'Auto Removal'.

Multi Factor Login

For an extra layer of security, Multi-factor authentication can now be turned on for a user. Once a user account has been created it can then be setup to utilise Multi Factor Authentication (MFA). By ticking the "Multi Factor Login" option in the Edit User page a screen similar to below is displayed. The user can then utilise any authenticator app, such as Google Authenticator, to scan the QR code or manually enter the long number underneath the image. When adding a new account the authenticator app will generate a code for the user to enter into the panel to verify successful completion of the process. The user must enter this code and click "verify" prior to saving any changes. Note each frontend account appears in the authenticator app using the Site ID of the frontend being added.



Once setup the user will be prompted each time to enter the MFA code after they have entered their login Username and Password (see below). Please note that the MFA is not a substitute for a strong password and should be used in conjunction with the clients existing security processes and procedures. MFA is supported via a web browser session and from the DMTouch front panel or TouchXL Orbit Console.



Please note that this feature relies on the panel time being correct, if the panel time is not correct the codes generated will not match up with the panel. RDM recommend that this feature is used in conjunction with an NTP server so that the panel time is always kept correct.

Many authentication apps store locally on the device they are installed the MFA credentials. Therefore, should a user upgrade or swap their device and install their preferred authentication app on this new device any frontend panels previously 'saved' will be lost. Each authentication app has recommended steps and processes to overcome this and therefore the user should refer to the relevant third-party documentation.

Add User

From the Service Menu select: System/ User Setup/ Add User

This menu allows users to be added to the DMTouch to permit them access into secure areas of the system. The page is identical to that found within the 'Edit User' page outlined above.

Note: - The maximum amount of user that can be added is 1024

Remove User

From the Service Menu select: System/ User Setup/ Remove User

From this menu it will list all the users available to remove. Simply click the appropriate tick box and select 'Remove User(s)'. Then click 'Remove User(s)'. **Note**: this action cannot be undone.

Elevations

From the Service Menu select: System/ User Setup/ Elevations

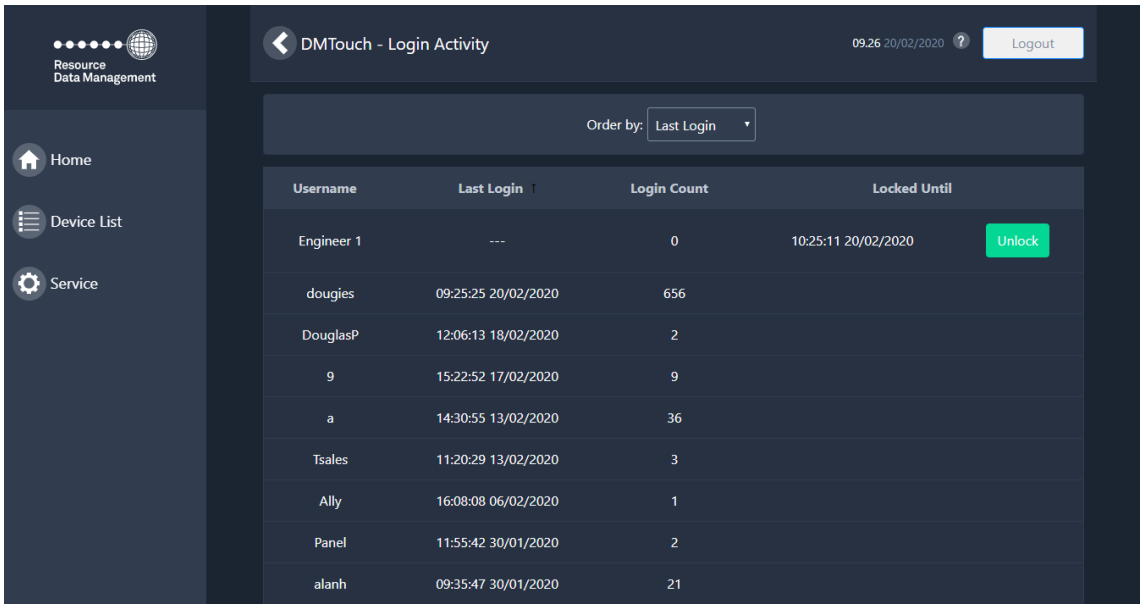
The user can check on any elevations that have been set from the User List menu. This screen will show the user, the original access level and the level they are to be elevated to. The page also shows the start and end time of the elevation. The current access level that the user is allowed will be highlighted in green.



Login Activity

From the Service Menu select: System/ User Setup/ Login Activity

User activity can be checked by using the Login Activity screen this will show how many times users have logged on the DMTouch and when they last logged in. The generated list can be sorted by User name, last login and Login count.



Please note that these screens will only show users with the same access level or lower.

Where users have had their account locked following 5 repeated log in attempts, they can be unlocked by an install level user by clicking the 'Unlock' button next to the username.

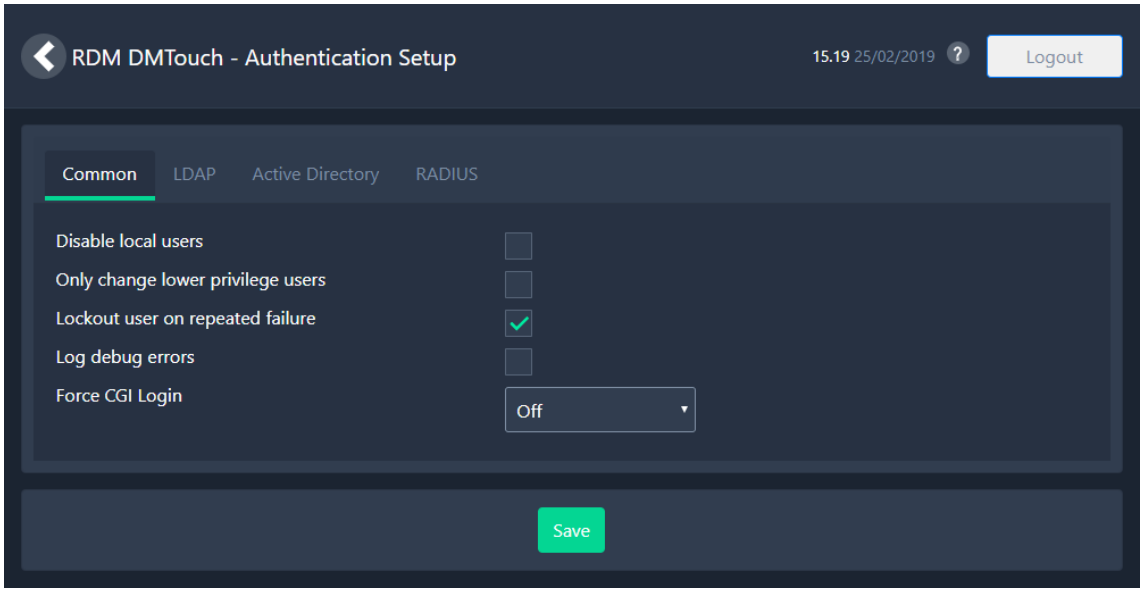
Authentication Setup

From the Service Menu select: System/ User Setup/ Authentication Setup

Users can be added to the DMTouch to access secure areas. This Setup feature allows for different types of authentications to be configured. The three types that can be configured are; LDAP, Active Directory and RADIUS.

Note: RDM cannot offer assistance in setting up access authorisation methods. Please consult the relevant IT personnel.

Upon entering the menu, it will show the common settings.



Disable Local Users: Check this option to disable all 'local' user level access. Local users are those that have only been setup from within the DMTouch. Note: all previously setup local users will not be removed, only disabled when the option is checked.

Only Change lower Privilege Users: Use this option so users at the same authentication level cannot amend/ remove others at the same level.

Lockout user on repeated failure: Check this option to automatically lock out users on repeated log in attempts. The default number of permitted log-in attempts is 5. If this number is reached, the user will be locked out for 1 hour.

Log debug errors: Check this box if required to diagnose any setup issues (LDAP, Active Directory or RADIUS). Uncheck when complete.

Force CGI Login: This feature allows the user to restrict viewing access to the DMTouch front end and the web interface. Note this does not affect normal log in procedures. The options are;

Off: Unrestricted viewing of the device list and layouts

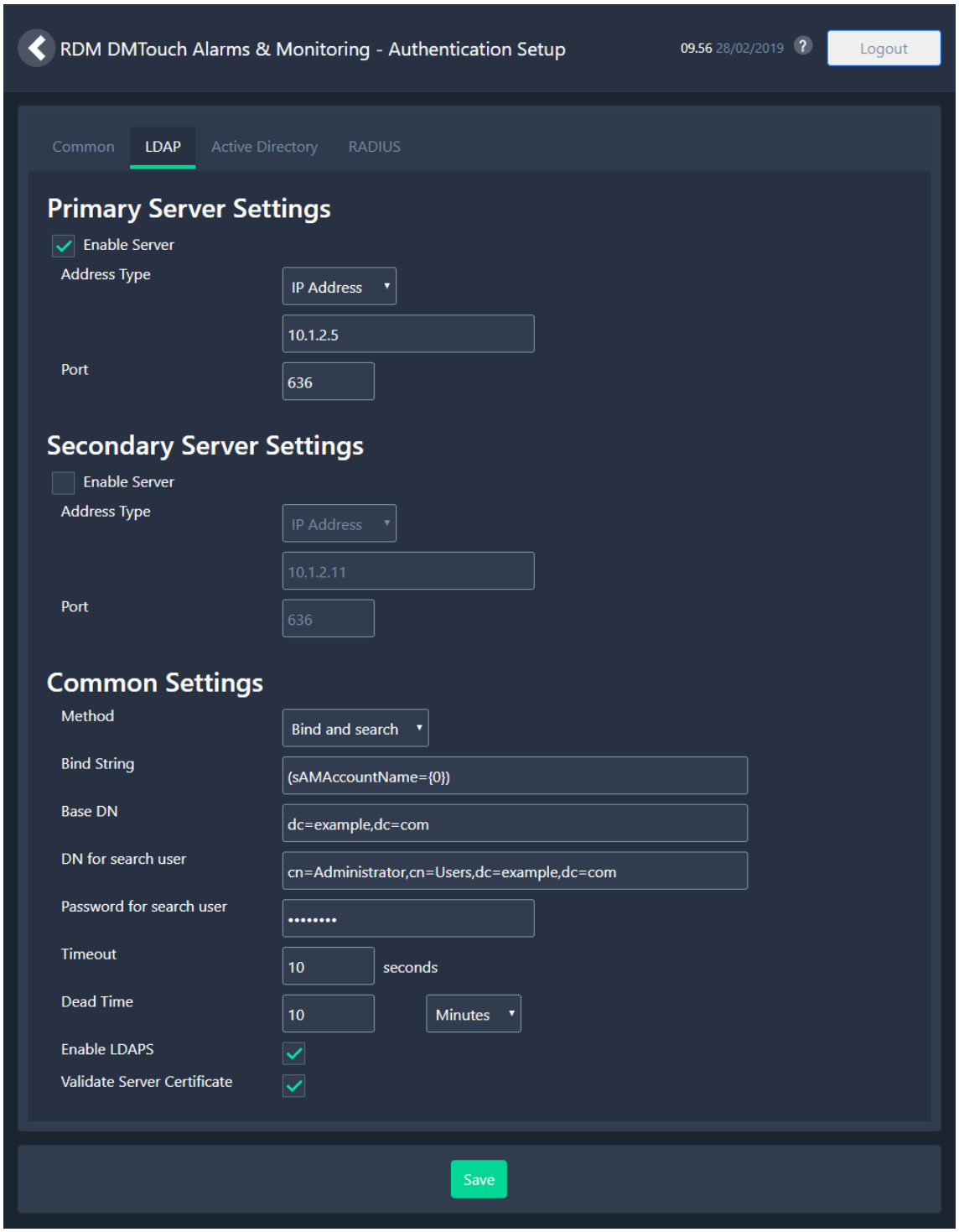
Local: Forces the user to log in at the Front End (touch screen), TouchXL (if connected) and any device connected on the panel's local subnet before they can view either device list or layout.

Remote (Default): Forces the user to log in from any device connected from out with the panel's subnet before they can view either the device list or layout.

Note: Accessing the DM via the secondary IP port will be counted as remote access.

Local and remote: Regardless of how the panel is accessed it will always force the user to log in before any site details can be viewed.

LDAP



The LDAP server needs to be accessible from the DMTouch. For example, its IP address must be reachable and the necessary ports opened to allow access.

Primary/ Secondary Server Settings

Enable Server: Check box to activate server details. When unchecked, the server will not be used.

Address Type: Select either IP address or DNS name

IP address / Name: Depending on the address type selected, enter the IP address or server name of the LDAP server.

Port: Enter the specific port the LDAP server uses. Default is 636.

Common Settings

Method: Select between 'Bind as user' or 'Bind & Search'

Bind as User

Bind as User only requires the 'Bind String' to be entered:

Bind String: The string used when binding the given username and password supplied from the DMTouch's log in page. For example: (sAMAccountName=**{0}**).

Once setup, when entering a username and password (within DMTouch login screen) it will replace the **{0}** with the user name and try to bind to the LDAP server with the supplied password. If successful then the login will be allowed.

Bind and Search
Bind and Search requires the following fields to be entered:

Bind String: The string used when binding the given username and password supplied from the DMTouch's log in page. For example: (sAMAccountName=**{0}**). Similar to above, the '{0}' is replaced with the supplied username.

Base DN: Enter the base DN used for the users. For example: '**dc=example,dc=com**'

DN for search user: The complete distinguished name for the user which has the ability to search. For example; '**cn=Administrator,cn=Users,dc=example,dc=com**'

Password for search user: Enter the password used in conjunction with the 'search user' field for the initial bind.

Timeout: Enter the time period in seconds before the requeststimeout.

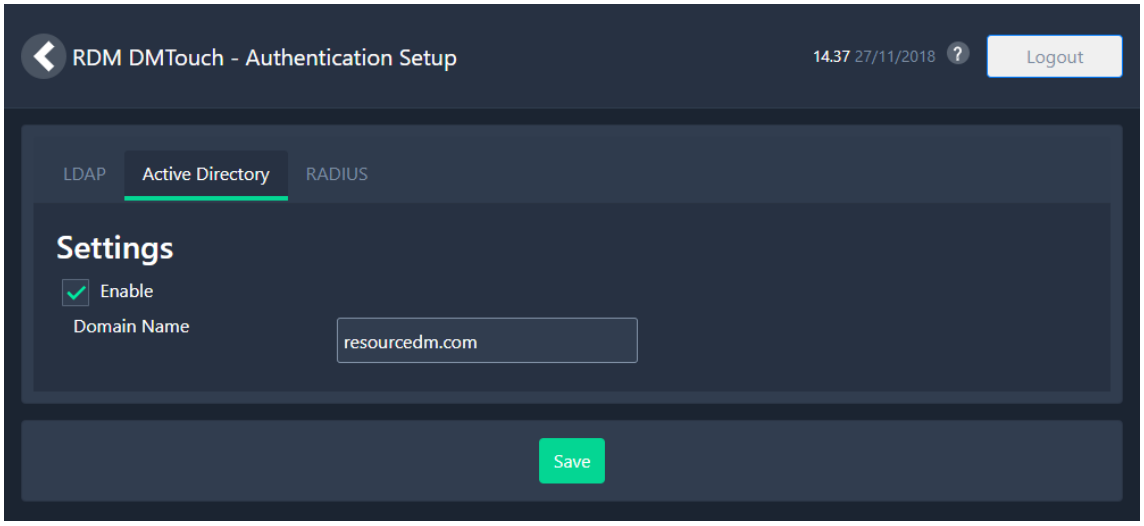
Dead Time: Following no response from the server, enter the time in seconds, minutes or hours before the LDAP will try the server again. In the 'dead time' the second server will be used (if setup).

Enable LDAPS:If the server uses Secure LDAP check this box.

Validate Server Certificate: Check the box if the server supports/ requires certificate validation.

Once details have been entered, click 'Save'.

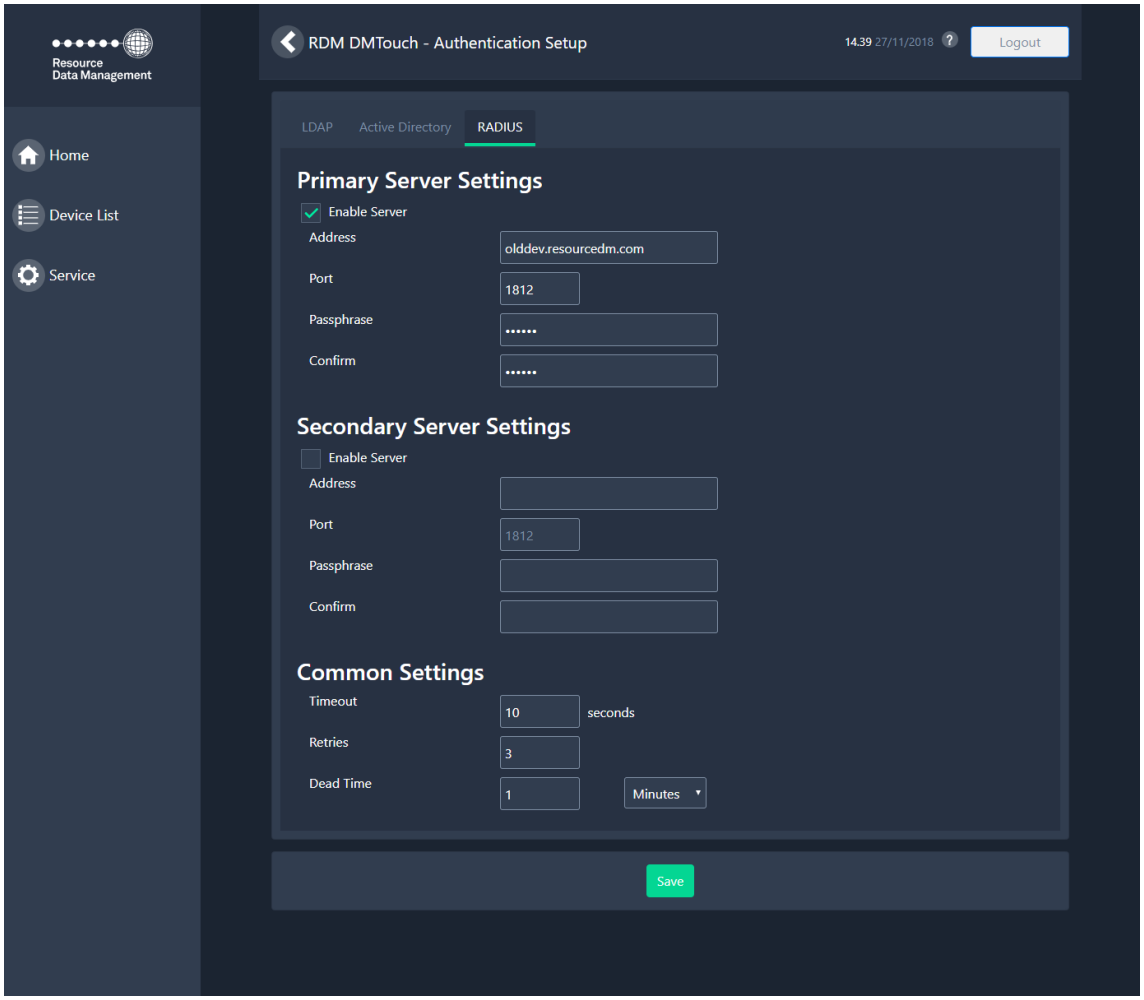
Active Directory



The Active Directory domain requires to be accessible from the DMTouch. It also requires a name server to be entered within the Network Card Setup page and the necessary ports (e.g. 53) opened to allow access. To configure, check the Enable box and enter the Domain Name.

Once details have been entered, click 'Save'.

RADIUS



The RADIUS server needs to be accessible from the DMTouch. For example, its IP address must be reachable and the necessary ports opened to allow access.

Primary/ Secondary Server Settings

Enable Server: Check box to activate server details. When unchecked, the server will not be used.
Address: Enter the IP address or URL of the RADIUS server.
Port: Enter the specific port the RADIUS server uses. Default is 1812.
Passphrase/ Confirm: Enter the security password to access the server

Common Settings

Timeout: Enter the time period in seconds before the request's timeout.
Retries: Enter the number of permitted retries.
Dead Time: Following no response from the server, enter the time in seconds, minutes or hours before the LDAP will try the server again. In the 'dead time' the second server will be used (if setup).

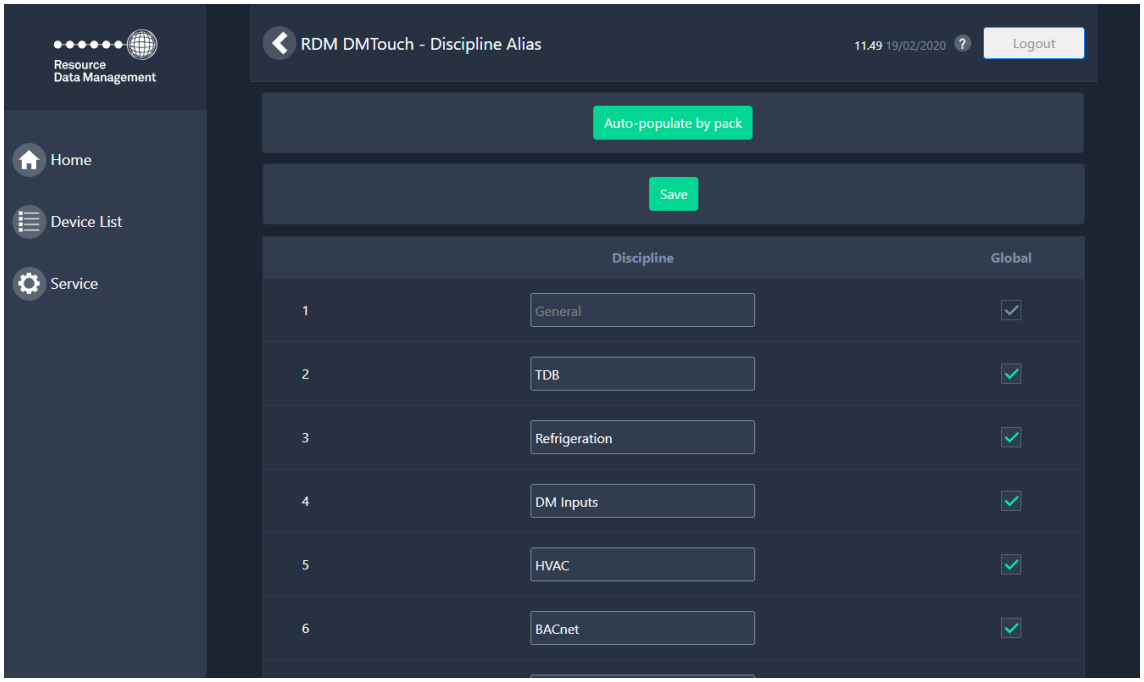
Once details have been entered, click 'Save'.

Disciplines

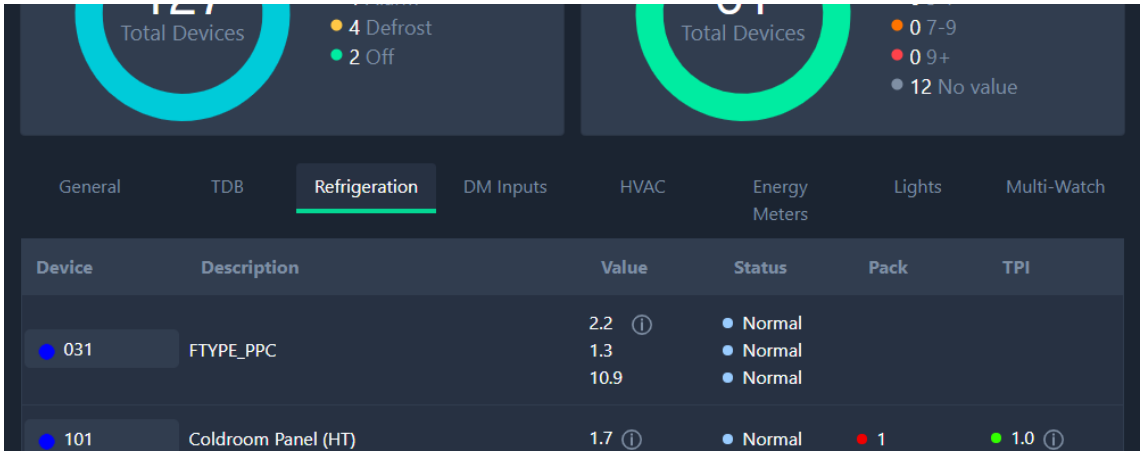
From the Service Menu select: System/ Disciplines

The Disciplines feature allows devices to be segregated into different groups or categories. The disciplines are user-definable and the users at either 'site' or 'service' level can be associated to them. This results in specific users, only having visibility of the devices assigned to them.

The 'Disciplines' menu allows install-level users to view and edit the list of disciplines. It will look similar to the below.



There can be up to 32 separate disciplines however the first listed (General) cannot be edited. When 'Global' is checked, all devices associated to that discipline will be visible on the device list regardless of whether a user is logged in. Furthermore, if the setting 'Tabs on Device List' is checked from within Site Setup then the disciplines will appear in tabs along the top of the device list. For example, with the above settings, the device list would look similar to the below:



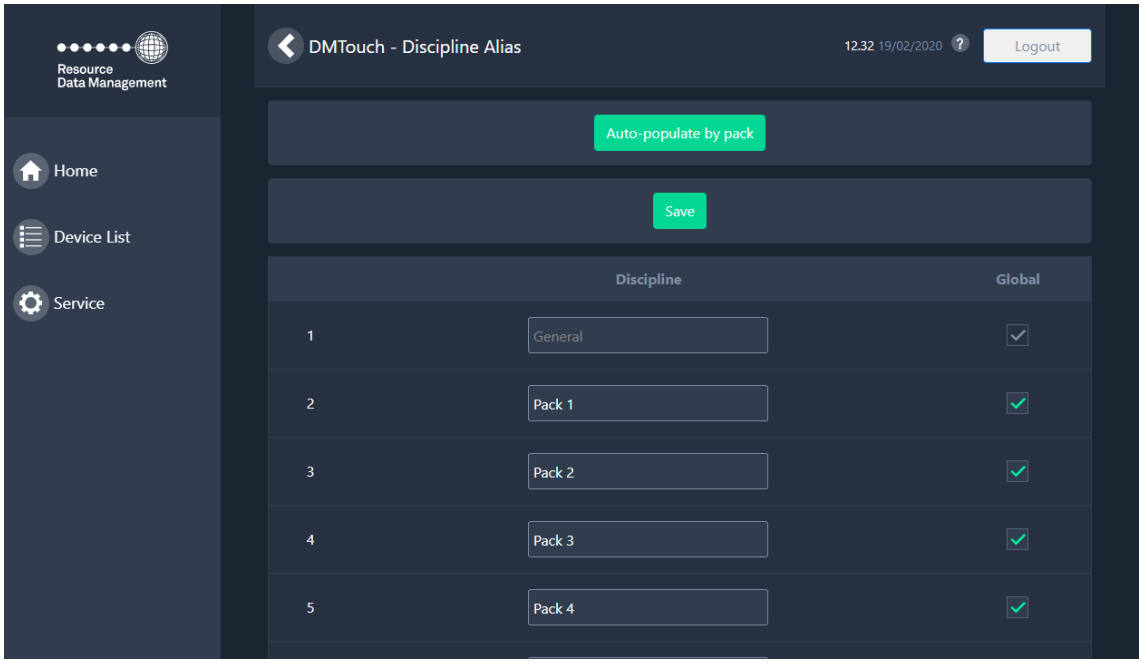
Where 'Tabs' on Device List' is unchecked, it will not have tabs and will simply show all devices in the disciplines marked 'Global' (see next section).

Note: A discipline can only be removed if there are no associations to it by either a device or a user (see next sections).

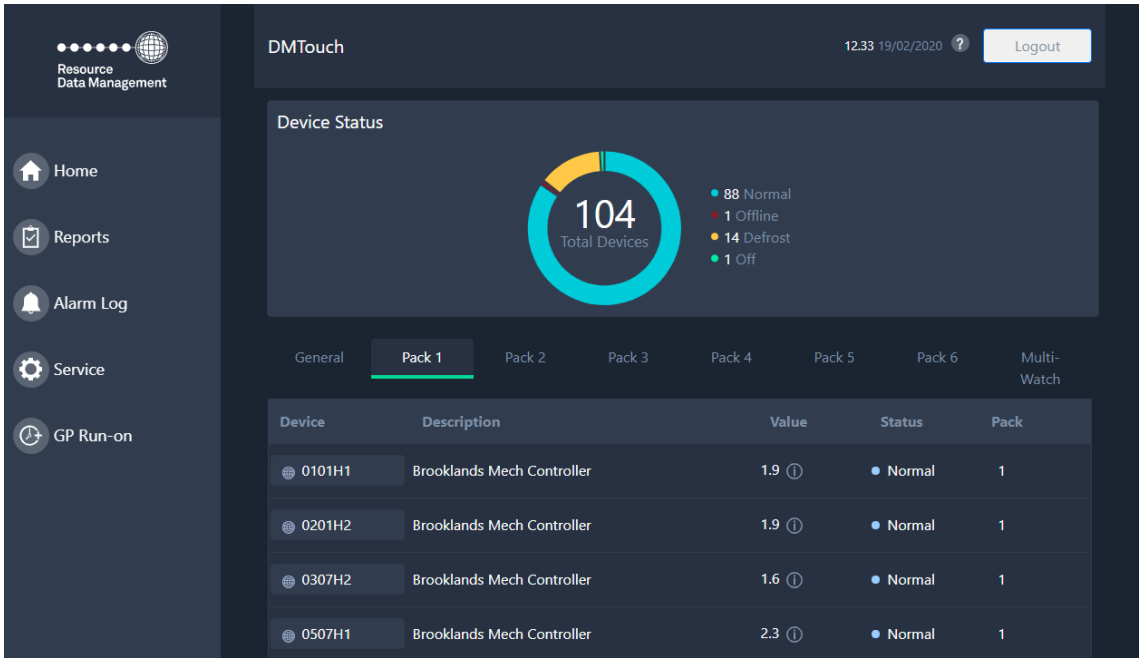
Auto-populate by pack

Disciplines can be automatically populated by clicking on the 'Auto-populate by pack' button. The feature relies on the device(s) having a 'Pack' associated to it, set within the Case Setup page.

When used, the list of disciplines will automatically update to show all 'packs' currently associated to devices as shown below;



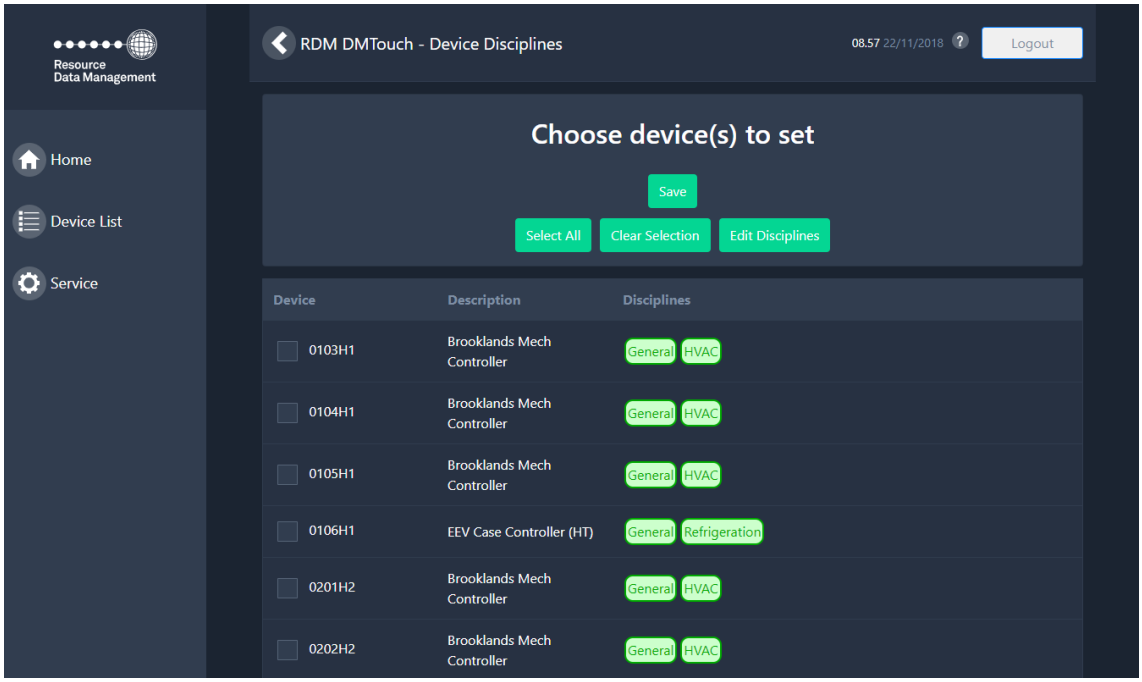
Furthermore, the devices with the pack association (assigned in Case Setup) will automatically be grouped under its 'pack' discipline/ tab. The pack device (configured in the energy feature 'Pack Setup') will also be listed under the tab.



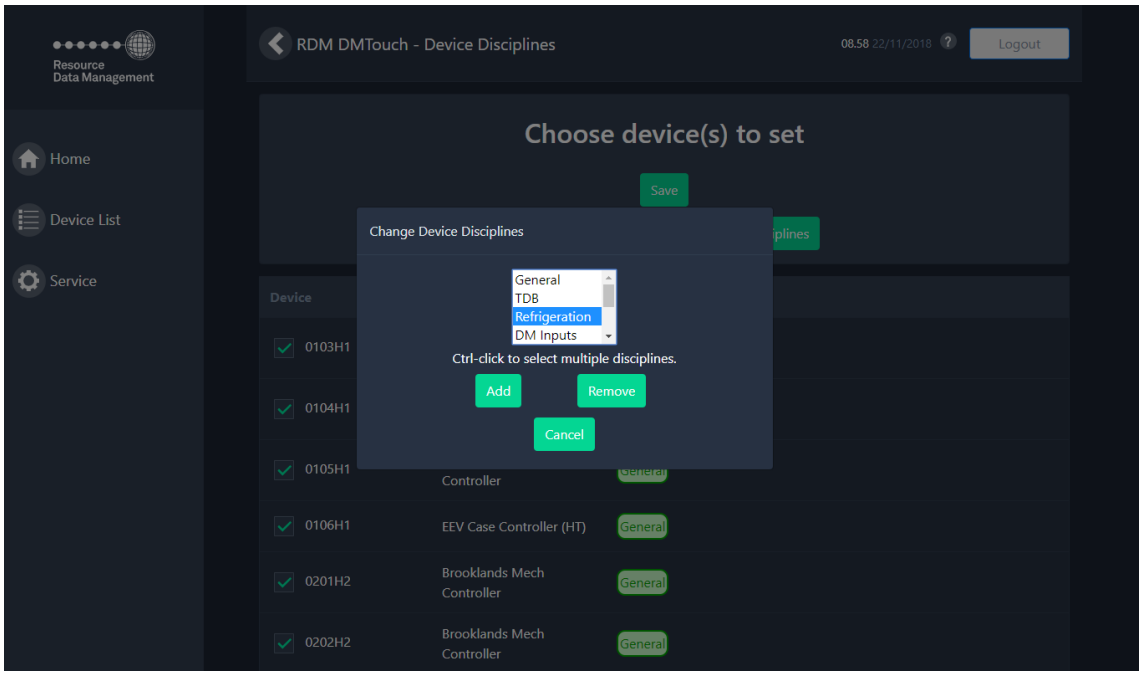
Device Disciplines

From the Service Menu select: System/ Device Disciplines

The Device Disciplines page allows all devices logged on to the DMTouch to be associated to specific disciplines set up in the previous 'Discipline' page. It will look similar to the below.



As default, all devices are pre-set to have 'General' associated to them, meaning all will be visible to any user, logged in or out. Disciplines coloured in 'Green' are Global where 'Red' are not (see previous section for info). Each device can be individually selected by clicking the 'check-box' or using the buttons 'Select All' / 'Clear Selection'. Once selected the devices can have the disciplines associated by clicking 'Edit Disciplines'.



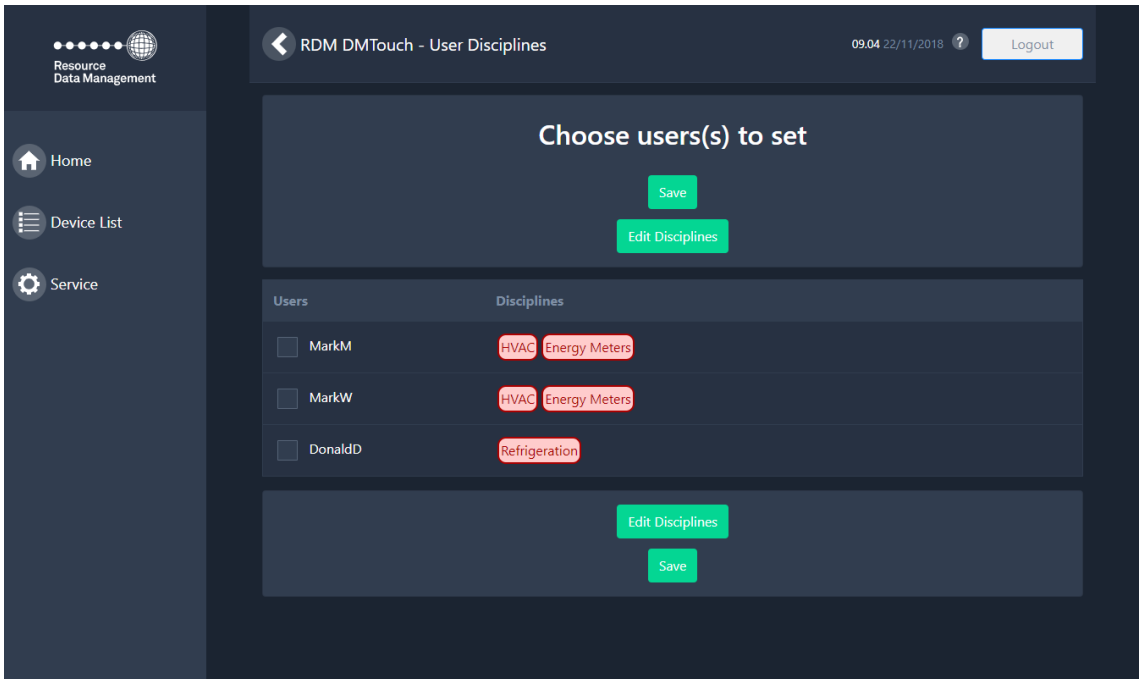
Within the 'Change Device Disciplines' window, a single or multiple disciplines can be selected. Clicking 'Add' will add the discipline to the previously selected devices. To remove disciplines already associated to devices, click 'Remove'. 'Cancel' will exit the window without applying changes.
Back in the list of devices and once complete, click on 'Save' to save all changes.

Note: When logging on a new device to the DMTouch, it will automatically be associated to the 'General' discipline. The removal of the device will permanently remove all other disciplines it has been associated to.

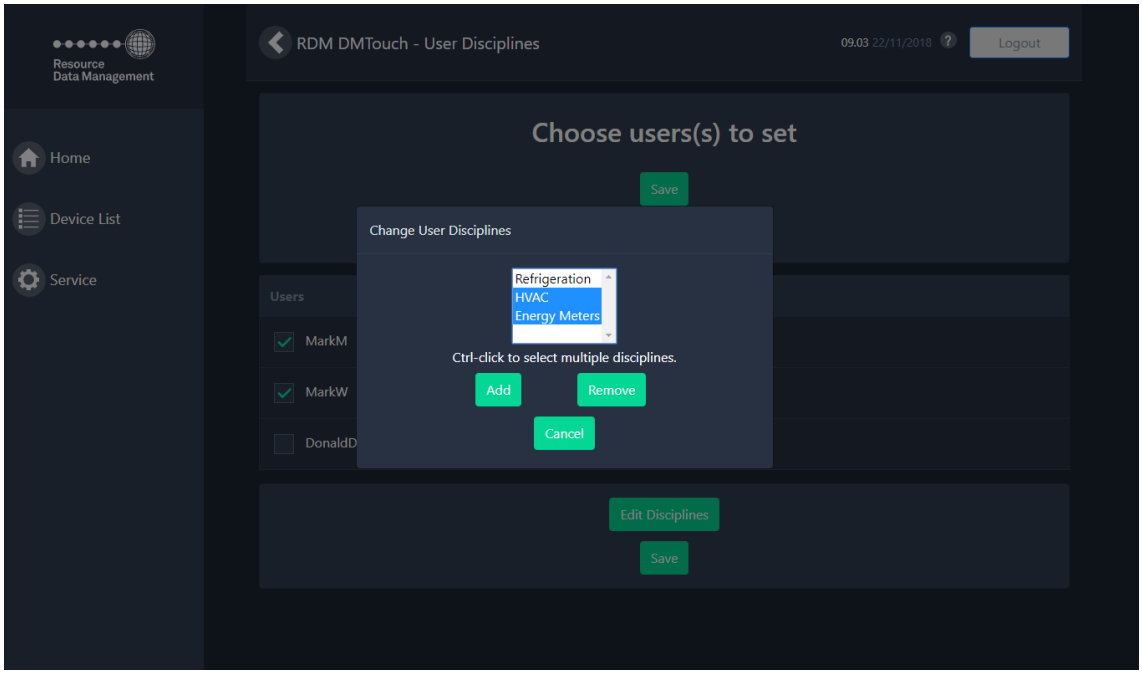
User Disciplines

From the Service Menu select: System/ User Disciplines

The User Disciplines page allows all 'Service' or 'Site' level users to have disciplines associated to them. It will look similar to the below.



It will list all site and service users along with the associated disciplines. By default, all users will have none. To edit the disciplines for a user either select one or multiple by clicking the 'check box' next to the user name, then click 'Edit Disciplines'.



Within the 'Change User Disciplines' window a single or multiple discipline can be selected. Clicking 'Add' will add the discipline to the previously selected user(s). To remove disciplines already associated to the user(s), click 'Remove'. 'Cancel' will exit the window without applying changes.

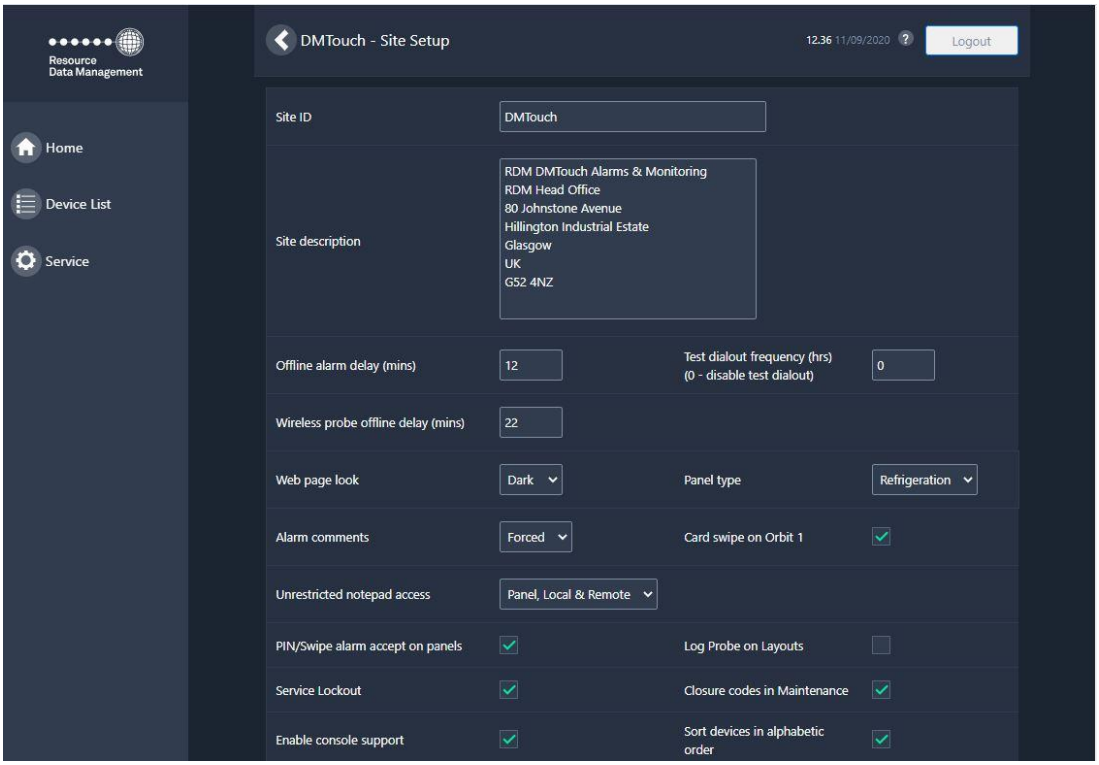
Back in the list of users and once complete, click on 'Save' to save all changes.

Note: Disciplines set to 'Global' will not be listed in the selection box, as by default they are visible to any user

Site

Site Setup

From the Service Menu select: System/ Site/ Site Setup



Site ID

Enter the Name of the site (Avoid using control characters such as &, *, ‘).

Site Description

Enter the description, usually this is the site address.

Offline Alarm Delay

Enter the Offline Alarm delay (default is 15 mins). The Alarm index number for an offline device is 7. **Note**: Setting a short alarm delay can result in spurious offline alarms.

Test dial-out frequency

Enter the time in hours (default is 24 hrs). Any Modem configured as ‘Modem’ will send a test dial out alarm every x number of hours. **Note**: That any Modem set to Email, SMS, GSM or other does not use the test dial-out feature.

Wireless Probe Offline Alarm Delay (mins)

Enter the Wireless Probe Offline Alarm delay (default is 22 mins). The Alarm index number for an offline device is 7. **Note**: Setting a short alarm delay can result in spurious offline alarms.

Web page look

Set the ‘Default’ colour scheme the DMTouch uses when the user selects ‘Default’ from the connected interface. Interfaces to the DMTouch includes the front touch screen, PC, Touch XL Orbit, phone etc. Please see Local Theme for details.

Panel Type

Select whether the DMTouch is to be set as a Refrigeration or an HVAC/BMS panel.

Alarm comments

Select how alarm comments can be appended to alarms. The three options are; Off, On or Forced. When 'Off', the acceptance of the alarm will not prompt for additional comments. 'On' will prompt for a user comment, however not compulsory to have one. 'Forced' will not allow acceptance or progress past accepting alarm unless a comment has been selected. Once entered, comments cannot be edited or removed from an alarm. However, subsequent comments can be appended to an accepted alarm.

Card swipe on Orbit 1 option

Check this option if cards are required to accept alarms on either the DMTouch or an Orbit Outstation Type 1.

Unrestricted notepad access

The notepad feature is explained in further detail within the Notepad section. This option changes the permissions required to access it. The options are;

None	No user has permission to access the Notepad without first being logged in on any interface.
Panel	Provides unrestricted access to the Notepad from the Front-End panel (touch screen) including any connected TouchXL orbits. Every other access is restricted with a login.
Panel & Local	Provides unrestricted access to the Notepad from the Front-End panel (touch screen) including connected TouchXL orbits and any PC connected that shares the same local subnet.
Panel, Local &Remote:	Gives unrestricted access to the Notepad feature from any interface.

PIN/Swipe alarm accept on Panels

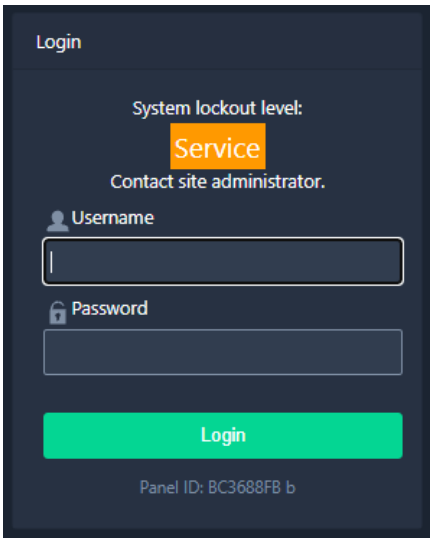
Check this option if Pin's are required to accept alarms on the DMTouch – uncheck this option to use the generic 'Mute 'button to accept alarms. With this option ticked, the alarm log will show which user accepted the alarm.

Log Probe on Layouts

Check this option if the Log Probe temperature value is required on the layout instead of the control temperature value.

Service Lockout

Check this option to prevent service level users changing parameters. This function can also be managed from enterprise level with our ActiveFM Site Lockout feature. For further information please contact the RDM Technical Support team.



Closure codes in Maintenance

Check this option for M&S sites, otherwise leave unchecked. Please note that this feature is not available with the miniDM.

Enable console support

Check this option if a TouchXL Orbit is to be connected to the DMTouch. Uncheck this option if the primary Ethernet port (Eth0) is used for external LAN and not controllers.

Sort devices in alphabetical order

Check this option to sort the devices in alphabetical order otherwise the devices will be sorted by when they were added to the system. **Note**: Will also sort devices with numerical names in ascending order.

Calls by contractor not discipline

Calls displayed via the Maintenance icon are shown by contractor and not discipline. Check this option for M&S sites, otherwise leave unchecked. Please note that this feature is not available with the miniDM.

Signal alarm locally if dial out fails

If an alarm fails to send from the panel, the DMTouch will generate an alarm locally, informing the user of a failed alarm dial out. Any subsequent alarms which follow will be directed to the 'Fail' action. Please see Alarm Actions for further details.

Web Services Enable

Offers the option to enable or disable both web services features. **Note**: For further details on the features available for both DMTouch and miniDM, please contact RDM.

Allow Recovery

Option to enable/ disable the recovery mode outlined in the DMTouch Reset or Recovery section.

Authentication on Web Service

Check this box if authentication is required when accessing the Web services features. Please note only 'local' user names (configured in user setup) are authorised to use Web Services. **Note**: For further details on the features available please contact RDM.

Static Namespace on Web Service

Check this box for a static namespace when using web services. Please contact RDM Technical Support for further details if required.

Web Service Version

This option allows the panel to use the current Web Services version 26/01/2022 or the previous version from 24/03/2017. The default is the 26/01/2022 version.

Further information then please refer to user manual Data Manager Web Services, Data Manager Enhanced Web Services & Intuitive TDB Web Services v2.3.

WSDL Exempt

When enabled, this allows the WSDL request to be exempt from force login restrictions.

No layout on phone

When viewing the DMTouch via a mobile phone interface, check this option to remove the layout and only show the device list. **Note**: Correct operation of this feature is dependent upon information supplied by your device browser.

Force CGI Login

This feature allows the user to restrict viewing access to the DMTouch front end and the web interface. Note this does not affect normal log in procedures. The options are;

Off	Unrestricted viewing of the device list and layouts
Local	Forces the user to log in at the Front End (touch screen), TouchXL (if connected) and any device connected on the panel's local subnet before they can view either device list or layout.
Remote (Default)	Forces the user to log in from any device connected from out with the panel's subnet before they can view either the device list or layout. **Note**: Accessing the DM via the secondary IP port will be counted as remote access.
Local and remote	Regardless of how the panel is accessed it will always force the user to log in before any site details can be viewed.

Lockout user on repeated failure

Check this option to automatically lock out users on repeated log in attempts. The default number of permitted log-in attempts is 5. If this number is reached, the user will be locked out for 1 hour.

Panel login User/ Password

When unchecked, to log in to a DMTouch or TouchXL Orbit, it requires the user's pin to log in to the service menus. Check this box to enable a username and password log in to access the menus. Please see User setup section for more details. **Note**: Option not present on miniDM Site Setup menu.

Log Thin Age (days)

The DMTouch will thin out stored data after this time period. The minimum value available to set is 10 days. Any data older than the 'Log Thin Age' parameter will be conditioned using the 'Log Thin Freq' parameter. For example, if the DMTouch has an SSD fitted, the 'Log Thin Age parameter is set to 10 days and the 'Log thin Freq.' is set to 60 minutes then graph data older than 10 days will be stored at 60-minute intervals instead of 15 seconds.

Warning: Once data is removed it is impossible to retrieve.

General Note: The DMTouch has a Solid-State Drive (SSD) fitted (PR0510) and graph data is stored at 15 second intervals. On older systems without either a Hard Disk Drive (HDD) or SSD (PR0500), graph data is stored at 15 second intervals for a finite period of time. Out with this period, data is stored at 15-minute intervals. The period of time at which data is saved at 15 seconds is dependent on the hardware issue of the panel and will vary. For current shipping DMTouch's it will store data at 15 second intervals until the log thin age is reached.

Log Thin Freq (mins)

Frequency of the logging in memory once the 'Log thin days' value is met. Select between 5-, 15- or 60-Minute intervals. **Note**: By default, the Log Thin Age is set to 180 days and Log Thin Freq is set to 5 minutes.

Clear Active Alarms (Alarm Inhibit)

By default, if a device goes into inhibit, any standing alarms will remain at least until it comes back from inhibit. If this option is checked then all standing alarms are cleared as it goes into inhibit.

Disable Plant Layout Display

If this option is checked it will prevent the DM from uploading plant layouts to use as mimics on the device page.

Alarm Delay Time (mins)

This option, when a time (in minutes) is inserted, offers an option for users to 'delay' alarms from the Front-End Panel or TouchXL Orbit. When activated, it will show an additional 'Delay' button when an alarm is sent to the front panel. Regardless of how many alarms there are, it will delay the alarm(s) for the duration set within this field. This will allow the user to log in to access the menus or, used in conjunction with the swipe system, log in to the 'Active FM' feature (for example a SME swiping in). After the duration of the alarm delay expires, the alarms, once more, will be sent to the front-end panel. **Note**: It doesn't clear the alarm so if the alarm has been directed to an alarm relay, modem etc. then these processes will still operate as expected and will not be affected.

GP Run-on Permission

Selects the access level permitted to override a GP timer channel. Choose between; None, Site, Service and Install. Once set, only users with this access level or above will be able to override the GP timer channel. **Note**: Please see GP run on section for details.

GP Run-on Limit (mins)

Set this to limit the GP Timer run-on period which the end user can enter. (Range is 0 mins to 1440 mins). **Note**: Please see GP run on section for details.

CGI Compression Option

Used to speed-up web page information to a browser. If your browser supports compressed web page data, this option can be selected to on, if unsure, leave the setting on Auto.

Web Page Refresh

Allows the user to determine, in seconds, the refresh rate of the DMTouch web pages e.g. Device Values page, Device List etc. Default is 5 seconds, 0 disables the feature (in general it is not advisable to disable).

Web Page Status Refresh

Allows the user to determine, in seconds, the refresh rate of the time and date, current alarms and online /offline status found on the banner at the bottom of the Web Pages (original look has the information in the Home Page). Default is 15 seconds, 0 disables the feature (in general it is not advisable to disable the feature).

Summary on layout

When a layout has been uploaded to a panel, this option allows the user to select if the 'Device Summary' charts are displayed when viewing the layout via the DMTouch front screen.

Optimisation ignore inhibited

This option is only used in conjunction with the 'Optimisation Energy saving features. For setup details see the Energy section. When checked, the optimisation 'case running count' will ignore all cases that have been placed on inhibit. If unchecked, the 'case running count' will include the inhibited cases.

Fit Layout

When viewing in a browser, this can allow the layout to appear larger on the page.

Mimic Authorisation

When mimics have been setup to view, either on the web interface, DM Front Panel or the TouchXL, restrictions can be enforced to prevent unauthorised users interacting with them, for example pressing overrides or moving sliders. Select from the following;

Logged-In only: Only permits interaction of mimics (web interface, DM Front Panel or the TouchXL) when user is logged in.
Panel: Permits interaction of mimics without requirement of log in from the TouchXL or DM Front Panel interface.
Local: Permits interaction of mimics without requirement of log in via local IP access i.e. remote access from within another subnet will require a log in.
Global: Allows interactions from any interface without being logged in.

Device Filter Bar

Allows the user to add a filter option and a search box to be displayed on the Device List. Devices can then be filtered to show all or those that are in Alarm, Offline, Defrost, Off or on Inhibit.

Device Filter Bar

Allows the user to add a filter option and a search box to be displayed on the Device List. Devices can then be filtered to show all or those that are in Alarm, Offline, Defrost, Off or on Inhibit.

Alarm repeat timer (mins)

If an alarm action has been set to repeat an alarm, it will use the value set in this setting to generate the repeat alarm. For example if it was set to 60 (default), if an alarm with an action set to repeat, it would regenerate that alarm after 60 mins and follow the assigned alarm actions again.

Secondary Web Port

(0 – disabled, must be greater than 1024)
HTTP connections by default are made on Port 80 of the DMTouch and Port 80 is permanently enabled regardless of the port number entered in this feature. Define a second port number if required, which as described, must be above 1024.This will allow any web connection (e.g Web Services) to work on this port.
Note: For permanent solutions RDM recommend the use of a third-party network device to perform this task. This option is provided for temporary access only.

USA Settings

Option on miniDM which allows user to change to Fahrenheit etc. miniDM requires to a restart before implementing changes.

Console Language

Select the language to be displayed on the DMTouch Front End Panel or miniDM, any attached TouchXL Orbits or Orbit 1's (Language files must be present). Contact RDM for further details.

Time-Zone

Select the appropriate location for where the DMTouch installation is located. The unit's time will adjust automatically with any daylight-saving times.

Modem Port

This is for information only. When a USB GSM modem is connected to one of the DMTouch's USB ports it will provide information on the connection, for example the signal strength. Simply click on 'Modem Information' to view any details. The GSM modem will allow the DMTouch to send alarm information as an SMS text message to a mobile telephone. Please contact RDM to confirm compatible devices.

Note 1: When using a USB GSM Modem to send SMS text messages select 'SMS (GSM Modem)' under Modem Setup.
Note 2: The USB GSM modem does not allow remote access to the DMTouch.

Save Site Configuration

From the Service Menu select: System/ Site/ Save Site Configuration

Use this feature to save the DMTouch's full site configuration to a file. The two options are to save the configuration internally to the DMTouch or to a local file (on PC or USB stick inserted in to DMTouch). The page will also provide a choice to either include layouts or not. See Appendix 2.

To prove a 'human' is interacting with the system to obtain a site setup, the user must enter the 'captcha' code.

Note: DMTouch V2.6 and above includes BACnet 'user-set' type files, generated from using the BACnet pending feature, in the saved configuration file.

Note: Site Configurations are not backward compatible. E.g. a configuration taken from V3.1.0 cannot be used on older software versions.

Restore Site Configuration

From the Service Menu select: System/ Site/ Restore Site Configuration

Use this option to restore the full site configuration (**Note:** use with caution). See Appendix 2. Select a backup configuration saved on a local PC or from a USB stick inserted into the DMTouch.

There is also an option to restore the site configuration from a file saved internally, if this is selected then the site configuration will be restored from the last saved configuration, this is saved automatically at midnight every day.

After the config is restored, if the DM does not have features activated that were activated on the config uploaded, the DMTouch banner at the top of the page will turn purple to indicate this. There will then be a menu displayed named Config Mismatch which is explained below.

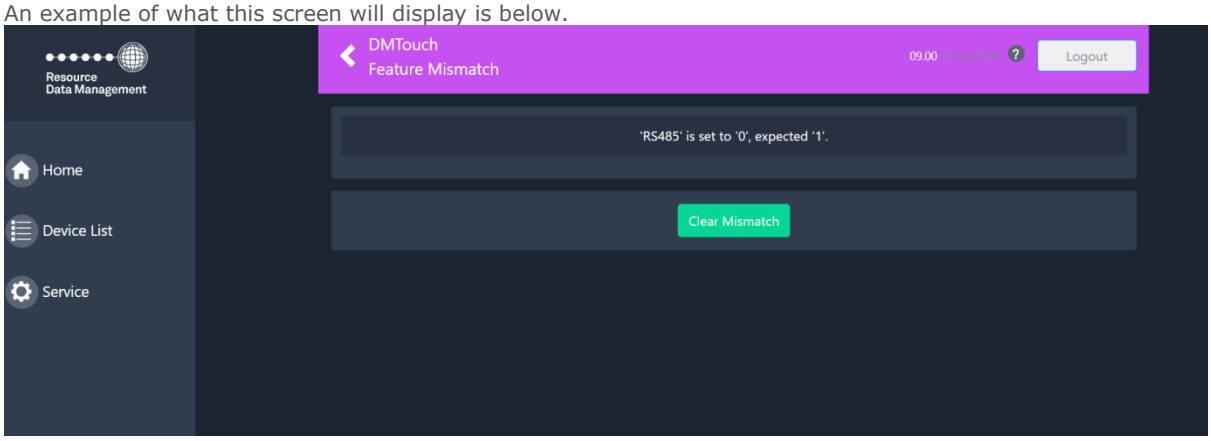
Note: If using a system configuration from an original Data manager and using a 485 network, please contact RDM Technical for further details before uploading on a DMTouch.

Config Mismatch

From the Service Menu select: System/ Site/ Config Mismatch

This option will only be visible if, after restoring a site configuration to a DMTouch, there is a difference in activations between DMTouch and configuration file.

An example of what this screen will display is below.



The screen will display what activations are currently at a mismatch, where in the example above, RS485 network support was present on the configuration file restored, but not activated on the DMTouch. This allows the user to easily identify any activations that may be required.

The "Clear Mismatch" can be used to then change the DMTouch banner back to its default and will remove this option from the Service menu.

DM Configuration Files

NEVER attempt to install a configuration file from a newer Data Manager Software version into a Data Manager with an older software version as this could result in complete system failure.

RDM will not be liable for anything that occurs as a result of this action having been carried out.

For further information or for questions regarding this matter please feel free to contact RDM Technical Support.

System Config

From the Service Menu select: System/ Site/ System Config

This is a view-only screen. It allows the user to view what features are currently enabled on the DMTouch. The user can also click on the Modbus TCP/USB Interface links to view the currently enabled pay for use Modbus templates. For activations of features please consult RDM Sales.

Add Feature

From the Service Menu select: System/ Site/ Add Feature

This is a utility to enable features that are currently disabled. Please refer to Appendix 3: Related Part Numbers for the full list of features.

This requires an authorisation code from RDM to activate new feature. **Note**: Once a valid activation code has been entered the DMTouch will restart.

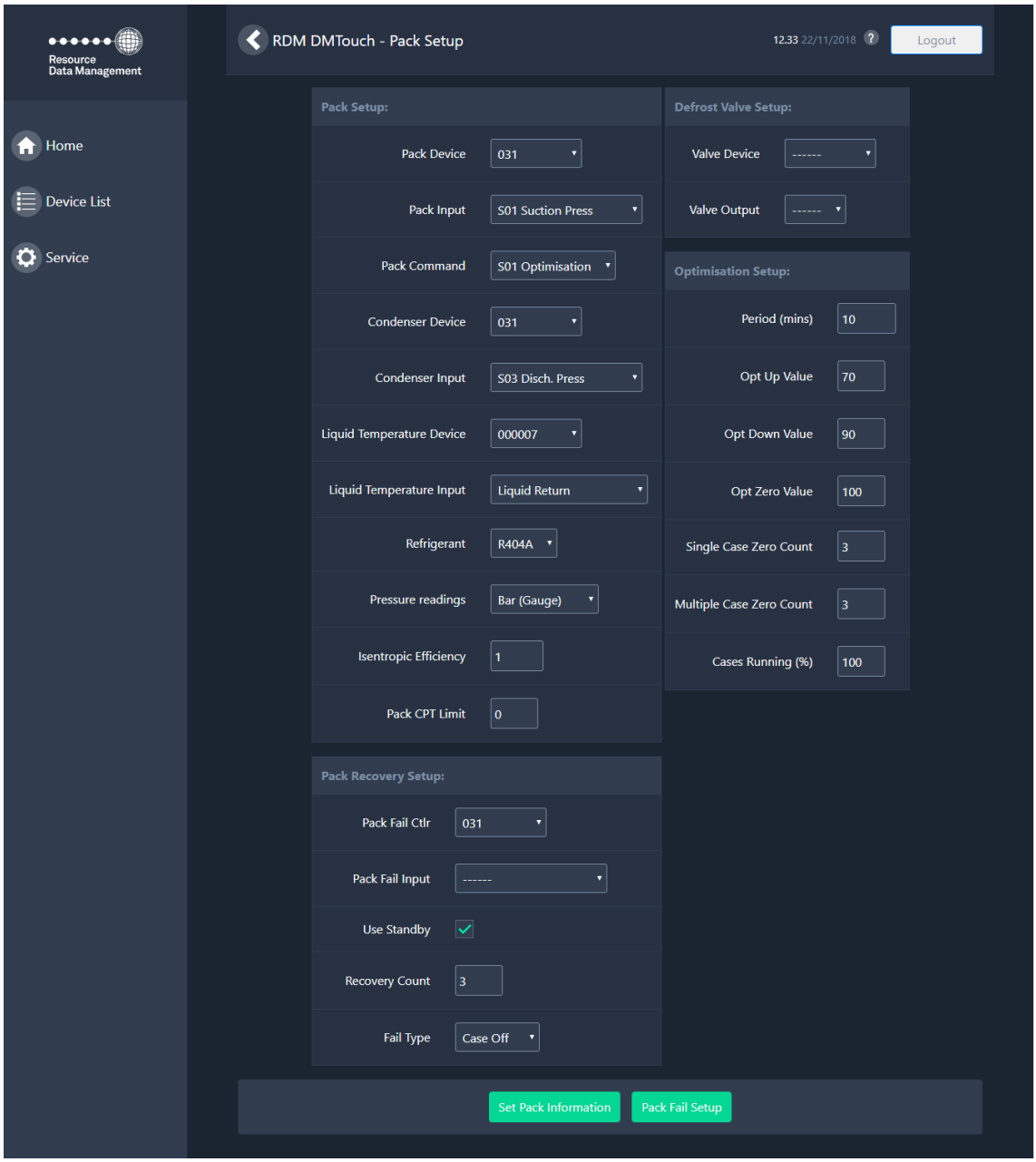
Energy

Pack Setup

From the Service Menu select: System/ Energy/ Pack Setup

The Pack Setup page allows the configuration of refrigeration 'Packs' to be used within a number of Energy Saving features such as Pack Recovery, Optimisation & Intelligent Load Shedding.

Upon entering the page, it will list up to 50 packs on the DMTouch and 5 on the miniDM that can be configured, select the pack to be configured from the list. **Note**: Packs which have been configured already will be highlighted green. The set-up page will be similar to the below.



Optimisation Setup

The energy saving feature 'Optimisation' is used to vary the Suction Target Pressure on a refrigeration pack when associated case valves are operating at an optimum level. The pack itself must be capable to receive optimisation commands and configured correctly before the user sets up the DMTouch's optimisation setup.

Field	Description
Pack Device	Use the drop-down menu to select the pack (Device name) to be optimised.
Pack Input	Use the drop-down menu to select the suction transducer for the section to be optimised.
Pack Command	Use the drop-down menu to select the command used to optimise the pack with. For a Pack with more than one section; Section 1 is Optimise 1, Section 2 is Optimise 2 and Section 3 is Optimise 3.
Condenser Device	Currently unused, may be used in the future.
Condenser Input	Currently unused, may be used in the future.
Liquid Temperature Device	Device to monitor liquid temperature.
Liquid Temperature Input	Probe selected on the device to measure liquid temperature.
Refrigerant	Select refrigerant type for the system.
Pressure readings	Select from Bar, PSI, Absolute or Gauge for displayed pressures.
Isentropic Efficiency	Enter the calculated Isentropic Efficiency of the system.
Pack CPT Limit	When the number of CPT OT alarms generated for the cases associated to the pack reach this limit a 'Pack CPT Fault' alarm is generated. Any subsequent CPT OT alarms associated to this pack do not appear in the DMTouch alarm list and no further action is taken. The Pack CPT Fault alarm clears when one of the initial CPT OT alarms clear. **Note**: The Pack CPT Fault will reoccur immediately if there are additional cases with CPT OT alarms. If set to 0 then the feature is disabled. The Pack CPT Fault alarm is generated from the pack controller configured; the alarm index number is 3. There is no alarm delay.
Period (mins)	Use to define the period over which optimisation is based.
Opt Up Value	% Efficiency below which will optimise up (% of controller valve opening).
Opt Down Value	% Efficiency above which will optimise down (% of controller valve opening).
Opt Zero Value	% Efficiency for no optimisation (% of controller valve opening).
Single case zero count	Number of Periods a single case reaches the 'Opt Zero Value' before optimisation is turned off.
Multiple case zero count	Number of cases that reach the 'Opt Zero Value' during a single period before optimisation is turned off.
Cases Running (%)	Percentage of cases which must be online before optimisation is enabled. For example, if this is set to 100% then every controller assigned to the Pack setup would have to be online before the feature operated.

Pack Recovery Setup

Pack recovery can be used in the event of a pack failure. When the selected input is activated, all the case controllers operating from the pack (set up in Case Setup page) can either be placed into 'Case Off' or have their refrigeration valves forced closed. When the input has cleared, the DMTouch will begin a recovery process and allow a pre-determined number of controllers to begin opening their valves over a set period of time. Mercury case controllers must have the appropriate software to use this feature. The software must have the Remote Command 'EEV Command' present before this feature will work. Consult appropriate case controller user document to determine software version required.

Field	Description
Pack Fail Ctlr	Select the source of the pack failure from a device in the device list.
Pack Fail Input	Select the source of the pack failure input from the device selected above.
Use Standby	If the Pack Fail Ctlr selected is a pack controller then ticking the 'Use Standby' option will force controller valves closed whenever the pack controller is in standby instead of using a dedicated input. **Note**: If both the Fail Input and 'use standby' is selected then the Pack Fail will be triggered by either.
Recovery Count	The number of controllers allowed to open their valves, once the recovery process starts, in a given period. Each period is fixed at one minute. If this parameter is set to 3 then 3 case controllers would begin refrigeration once the pack fail input has cleared, after a one-minute delay a further 3 controllers will start the refrigeration process until all cases resume normal refrigeration control.
Fail Type	This field dictates what command is sent to the controller. 'EEV Close' will send a command to close the valve of the controller. 'Case Off' will send the command to put the unit in the 'Case off State'.

Note: When the assigned failure input equals '1'the pack is 'Normal' and when input equals '0' then pack fail.

Defrost Valve Setup

The Defrost Valve is used in conjunction with a Defrost Header Station.

Field	Description
Valve Device	Select the appropriate defrost header station controller from the drop-down list.
Valve Output	Determines the relay that will be operated, from the above device, when any case mapped to the pack setup configured is in defrost. Select the relay output from a drop-down list. **Note:** only relays which allow remote operation should be selected.

Pack Fail Setup – Intelligent Load Shedding

Within the Pack Setup page, click the 'Pack Fail Setup' button.

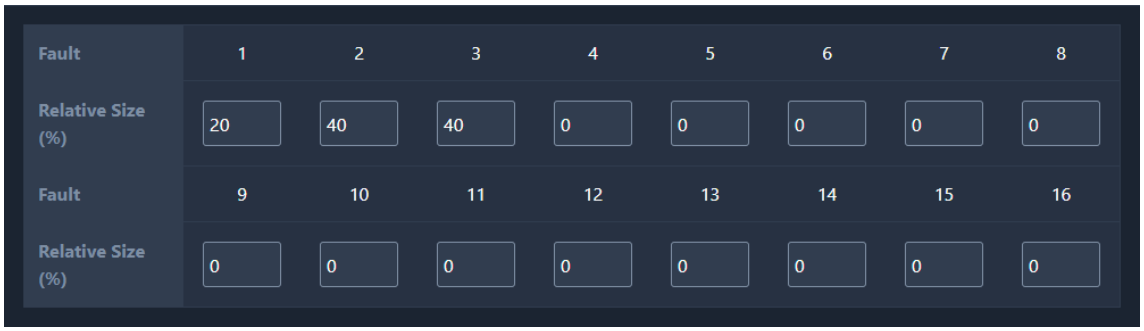
The following feature can be used in standard refrigerant systems or CO2 installations. This software feature provides a higher level of safety and resilience within a refrigeration system by automatically turning off cases intelligently, starting with the least critical assets when it detects pack compressor problems which threaten the whole system. The feature assists in preventing stock loss, ensures continuation of site trading and reduces the urgency of an engineer attending the site.

If the pack pressure goes too high or there are compressor failures on the pack associated to the system the DMTouch can place the case controllers associated with the system into a 'Case Off' mode. The purpose of this is to reduce the duty on the pack by dropping a proportionate amount of load then recovering it once the pressure is stable or the compressor failure resolved.

The order in which cases are shutdown are identified from a pre-determined list that specifies the case duty and the case priority, so to find a 20% load reduction the software may be configured to first turn off all beers, wines and spirit cases and then 16ft of produce cases, affecting produce which will not be spoiled by temperature raises.

If the condition deteriorates and another compressor is lost then the software turns off more case sections based on the priority list whilst maintaining operation in the rest of the system. At all times the RDM DMTouch front end informs the site of the situation and confirms the cases that have been shut down and since the Intelligent Load Shedding case shutdown ensures that the least critical cases are removed first this reduces the risk of stock loss and gives more time and notice to the site staff should they need to close night blinds or to remove stock for storage elsewhere.

Fault 1 to 16 and Relative Size (%)



Within the compressor fault table, enter the relative size of the compressors associated to the Status Inputs of the pack.

Field	Description
Fault	Compressor Fault Inputs being used on the pack device.
Relative Size (%)	Percentage of capacity that will be lost when the fault input is activated, this must total 100%.

Ambient Capacity (%)



Uses the ambient temperature to determine how much capacity is available, for example:

Based on the above screen shot, at 25 Deg C there will be 100% capacity. But as the ambient temperature drops, the pack does not have to work as hard therefore overall, there is spare capacity available.

Note: Where the pack has more capacity than the refrigeration on the sales floor total capacity requires, this can be allowed for in these settings. For example, if the pack is 20% oversized then the starting point at 25 Degrees would be 120%.

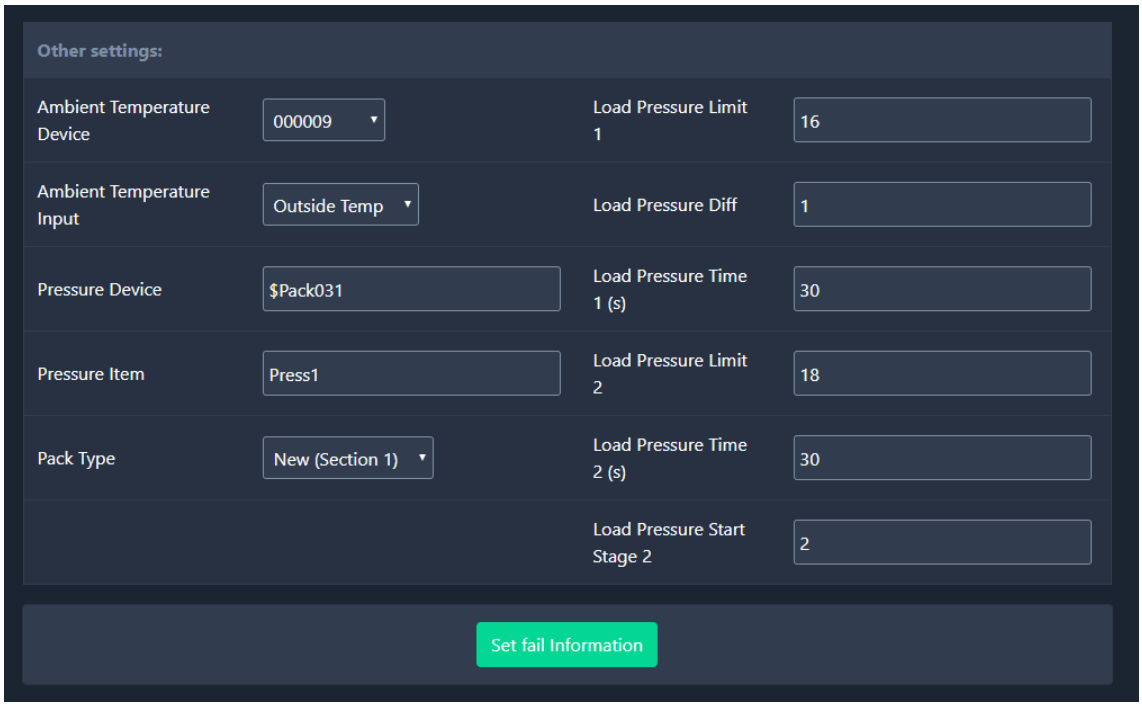
Example: With above settings if the ambient temperature is above 25 Degrees (100% Capacity) and say fault input 1 is activated, then 20% of the capacity has to be dropped and X number of cases have to be placed into CO2 Case Off.

If the ambient temperature is below 10 degrees (150% Capacity) then there is not the same requirement to load shed and therefore zero cases will be placed into Case Off. A further 2 fault inputs would have to activate before the capacity will drop below 100% thus requiring cases to be placed into Case Off.

In this example we are using 10 cases and 5 status fault inputs to demonstrate the operation of load shedding.

Active Input	25 Degrees (100% Capacity)	10 Degrees (150% Capacity)
Comp Fault 1	2 Cases to Case Off (80% Left)	0 Cases to Case Off (120% Left)
Comp Fault 1 & 2	2 Cases to Case Off (60% Left)	1 Case to Case Off (90% Left)
Comp Fault 1, 2 & 3	2 Cases to Case Off (40% Left)	3 Cases to Case Off (60% Left)
Comp Fault 1, 2, 3 & 4	2 Cases to Case Off (20% Left)	3 Cases to Case Off (30% Left)
Comp Fault 1, 2, 3, 4 & 5	2 Cases to Case Off (0% Left)	3 Cases to Case Off (0% Left)

Other Settings



Field	Description
Ambient Temperature Device	The Device being used to measure ambient temperature for the ambient capacity calculation.
Ambient Temperature Input	Ambient Probe input from the 'Ambient Temperature Device'.
Pressure Device	Enter the Pack controller name which is being monitored. If this device is an Intuitive TDB device, then this name is the **Network name** used for peer-to-peer broadcasts. If this device is an RDM Pack controller then it is the **rotary switch values** on the device, appended with a '**$Pack'** sign. This name is case sensitive. E.g., '$Pack031'.
Pressure Item	Using a TDB Pressure Device, this has to match the TDB block which is set to broadcast the value i.e., the '**Broadcast'** box in properties for the TDB block will be ticked. If using pack pressure from an RDM Intuitive pack controller then use one of the following; **Press1** or **Press2** or **Press3**. Both methods are case sensitive.
Pack Type	Select the pack controller 'type' for use with the compressor fault/ relative size section. For Intuitive Super packs, select from; 'New Section 1', 'New Section 2' or 'New Section 3' depending on which section is being monitored. For standard pack controllers, select 'old'.
Load Pressure Limit 1	If pressure reaches this value it will start to load shed at intervals set at "Load Pressure Time 1".
Load Pressure Diff	If the pressure drops by this amount below the limit, it will recover load at same time intervals.
Load Pressure Time 1	The time limit in seconds between shedding load and recovering load.
Load Pressure Limit 2	If pressure reaches this value, it will skip stages and go to the stage set in 'Load Pressure Start 2'.
Load Pressure Time 2	The time limit between shedding load and recovering load after limit 2 is reached
Load Pressure Start Stage 2	The stage that it will go to if 'Load Pressure Limit 2' is reached.

Requirements

- RDM DMTouch, Case controllers and Pack controllers are required for this feature to operate.
- The case controllers in use must have the appropriate parameters configured and software installed which allows remote Case Off and CO2 Case Off shutdown states. See case controller document for further information.
- The pack controller in use must have the appropriate parameters configured and software installed which allows it to broadcast the suction pressure. See pack controller document for further information.
- The case controllers must be assigned to the Pack being monitored, have their Duty in kW entered and their priority assigned via the Case Setup page in the DMTouch.

Case Setup

Please see earlier Case Setup section.

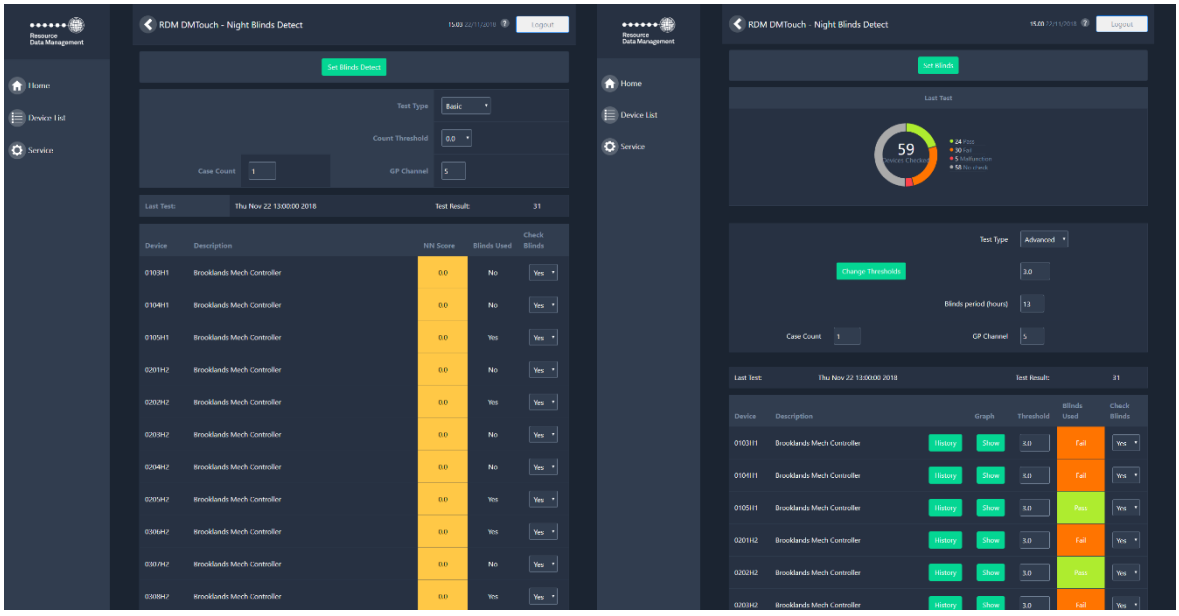
Night Blinds

From the Service Menu select: System/ Energy/ Night Blinds

The Night Blinds feature is designed to run daily checks on whether the night blinds have been used on individual cabinets. From the blinds feature, the standard of Blind Check can be either 'Basic' or 'Advanced' selected in the 'Test Type' field. The advanced selection will show more detail of why units passed or failed the test.

Basic Blinds Check

Advanced Blind Check



Test Type – The test type can either be 'Basic' or 'Advanced'.

Note 1: The time period the check is run over must be consecutive, for example it will not be deemed a 'pass' if the blinds are used intermittently overnight.
Note 2: From DMTouch V3.1.0 and above the night-blind check will be run between 1pm and 1:30pm and subsequently generate any alarms if necessary, during this time.

Advanced Blinds Check

The Advanced Night Blinds check will show more detailed information to why a check passed or failed for a specific device.

Change Threshold: In Deg, each case has an expected 'threshold' that represents the expected change (drop or rise) in temperature the cabinet will have when the night blinds are in use. By using the 'Change threshold' button it will alter every threshold for all cabinets (NB to set the values the 'Set Blinds' still needs set).

Blinds Period (Hrs): The expected length of time the night blinds will be in use for.

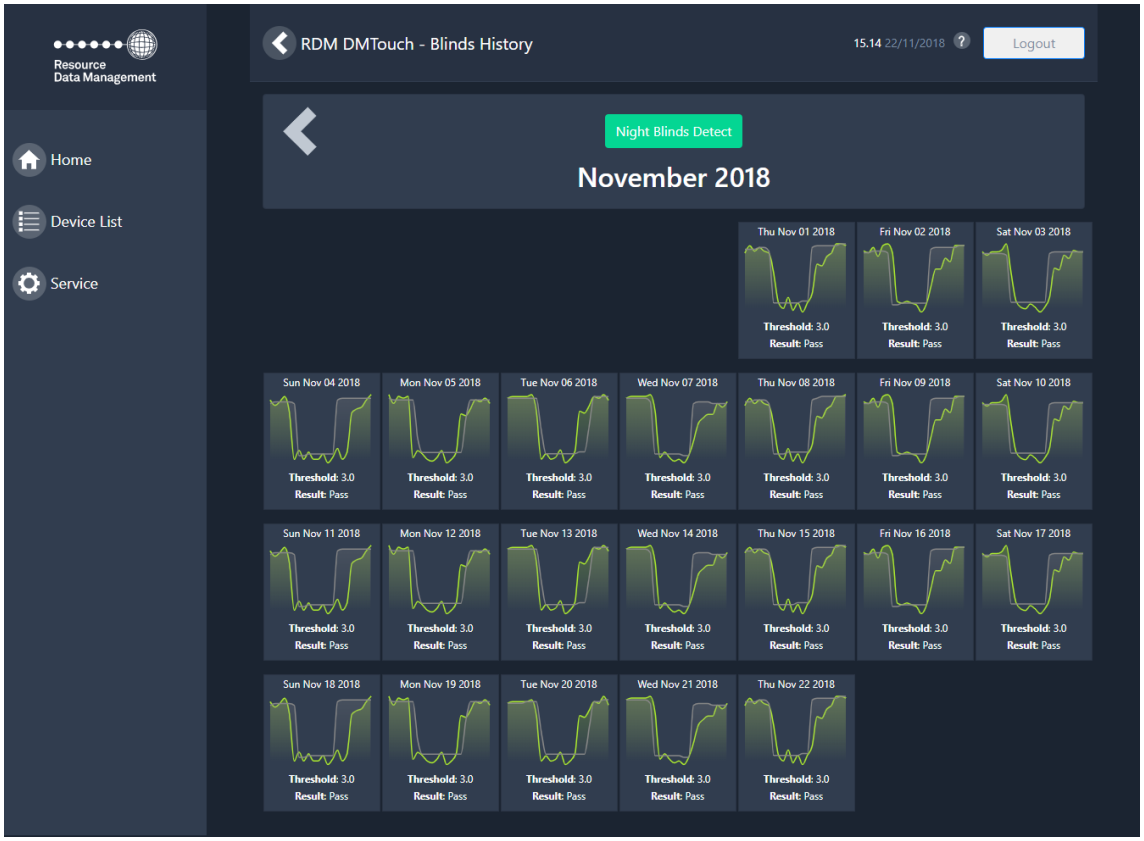
Case Count: This is the parameter for the number of cases to fail the Night Blind test before an alarm will be generated.

GP Channel: This would be set to the GP Timer Channel where the 'core' building operating (e.g., site trading) times are set. In instances where the site is closed for the day, and therefore the night blinds will not be raised/lowered, the detection process will not run.



On the controller list, select the controllers that you want to be checked by using the 'Check Blinds' button on the right-hand side of the screen.
To view the general behaviour of the case temperature and the expected trend, click on the 'Show' icon in the Graph column. Alternatively click on 'History' to view all recent night-blind graphs (below). You can also run reports on the night blinds from the Home Screen by selecting the 'Reports' option.
The Night Blinds graphic (see example on right) will show the expected trend of the temperature difference in grey and the actual difference in green (or red if fails). The Y-axis is temperature, X-axis is time.

By clicking on the 'History' Button, it will show the past test results of the Night Blind Checks. It will look similar to the below.



Basic Blinds Check

The basic Night Blind check will run a similar check to that of the advanced version however will not show any graphs of temperature trends.

Count Threshold: This is the value below which, a controller blinds 'NN Score' counts as a failure and thus will appear as a 'No' in the 'Blinds Used' column. **Note**: This was previously fixed at 0.

Case Count: This is the parameter for the number of cases to fail the Night Blind test before an alarm will be generated.

GP Channel: This would be set to the GP Timer Channel where the 'core' building operating (e.g., site trading) times are set. The Channel would be 'looked at' to aid the algorithm with discrepancies. For instance, if a site is closed all day.

A score below 0 indicates blinds not used. A score above 0 indicated blinds used. The 'Test Result' at the top, indicates the number of 'No' or blinds not used.

Note: The default thresholds used for the Night Blind calculation may not be compatible with all case types and design. Therefore, calibration may be required to ensure the correct operation of the feature. RDM cannot guarantee the correct operation in every instance due to variations in case design, probe positioning, onsite conditions etc. For further information please contact RDM Technical Support.

Condenser TD

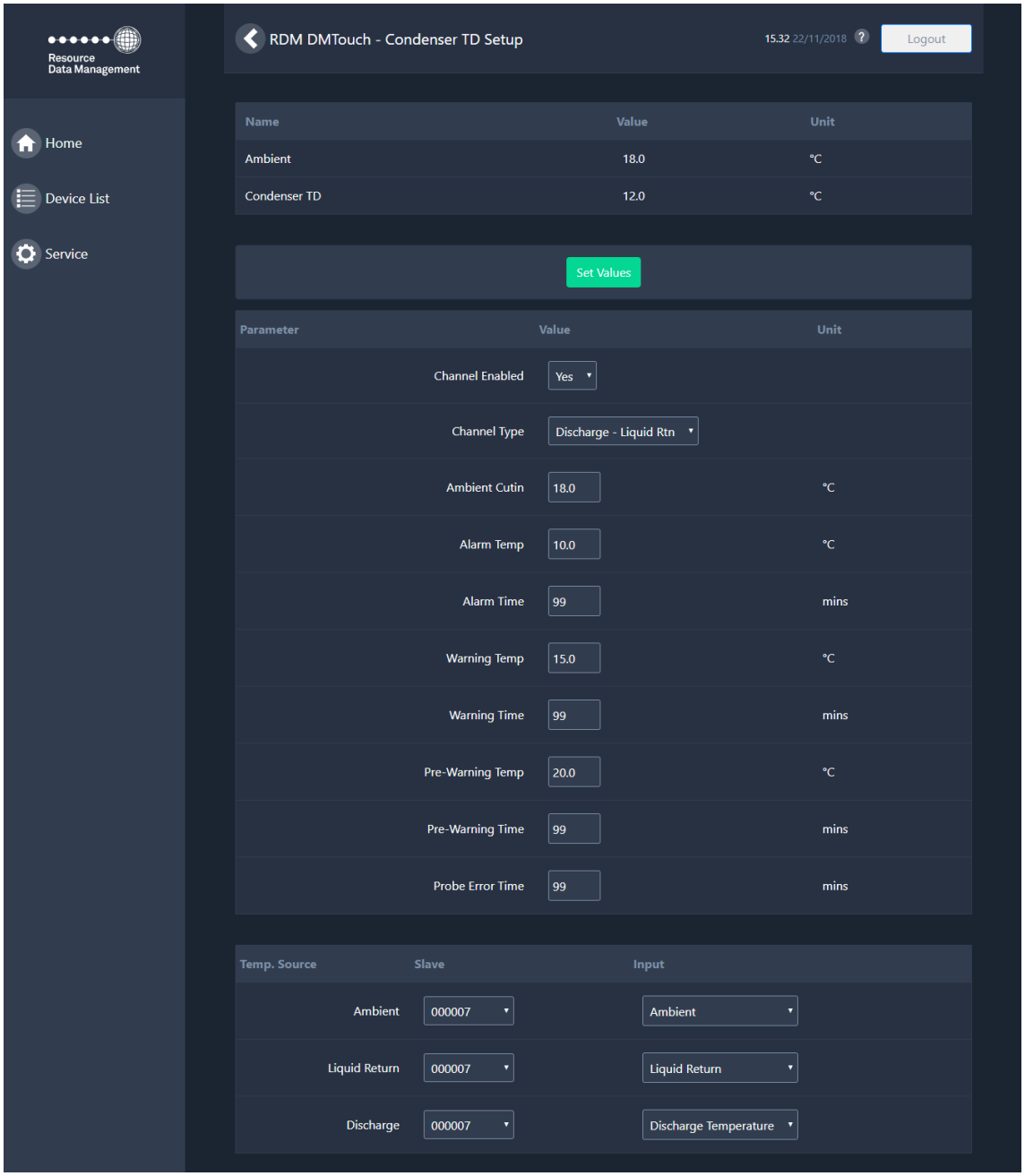
From the Service Menu select: System/ Energy/ Condenser TD

This feature allows for the early warning of problems associated with a condenser. Three temperature probes are used; Ambient, Liquid Return and Discharge. The probes can be any 3 probes in the system and their source is mapped using this page. Three levels of alarms can be set, Pre-warning, Warning and Alarm. This feature highlights a condenser which is not operating efficiently thus wasting energy. Up to 50 condenser channels can be monitored on the DMTouch and 5 on the miniDM. Each channel enabled appears as a virtual controller in the Device List which allows for graphing of data and changing of parameters.

There are two methods available to monitor condenser performance;

Discharge – Liquid Return OR **Liquid Return – Ambient**

For setup of each, see below.



For both options, the 'Temp. Source' table must be configured. From the drop down menus, listing the available devices, select the individual probes to be associated to the Temperature sources.

Discharge – Liquid Return

The Condenser Temperature Differential (TD) value is calculated by subtracting the Liquid Return from the Discharge Temperature

Field	Description
Channel Enabled	Used to activate the condenser warning for this channel. Set to 'Yes' to enable.
Ambient Cut in	Temperature above which the condenser TD warnings are active.
Alarm Temp	Temperature difference level at which the Alarm is activated once the calculated TD value drops below this value and the alarm delay has expired.
Warning Temp	Temperature difference level at which the Warning is activated once the calculated TD value drops below this value and the alarm delay has expired.
Pre-Warning Temp	Temperature difference level at which the Pre-warning is activated once the calculated TD value drops below this value and the alarm delay has expired.
Time Parameters	Each of the above has an associated delay time that can be set from 00-99 minutes.
Probe Error Time	If there is a probe fault, the alarm can be delayed by 00-99 minutes

Liquid Return – Ambient

When the channel type is set to 'Liquid Return- Ambient', the Condenser TD value is calculated by subtracting the Liquid Return temperature from the Ambient Air On temperature.

Field	Description
Channel Enabled	Used to activate the condenser warning for this channel. Set to 'Yes' to enable.
Ambient Cut in	Temperature above which the condenser TD warnings are active.
Design TD	Enter the Design TD of the condenser.
Alarm Level	Figure added to the Design TD parameter and is used to generate the Alarm Temp alarm. The alarm occurs once the calculated Condenser TD rise above this value and the alarm delay has expired.
Warning Level	Figure added to the Design TD parameter and is used to generate the Warning Temp alarm. The alarm occurs once the calculated Condenser TD rise above this value and the alarm delay has expired.
Pre-Warning Level	Figure added to the Design TD parameter and is used to generate the Pre-warning Temp alarm. The alarm occurs once the calculated Condenser TD rise above this value and the alarm delay has expired.
Time Parameters	Each of the above has an associated delay time that can be set from 00-99 minutes.
Probe Error Time	If there is a probe fault, the alarm can be delayed by 00-99 minutes.

Each of the above has an associated delay time that can be set from 00-99 minutes. Kelvin (K) is used to denote a temperature difference.

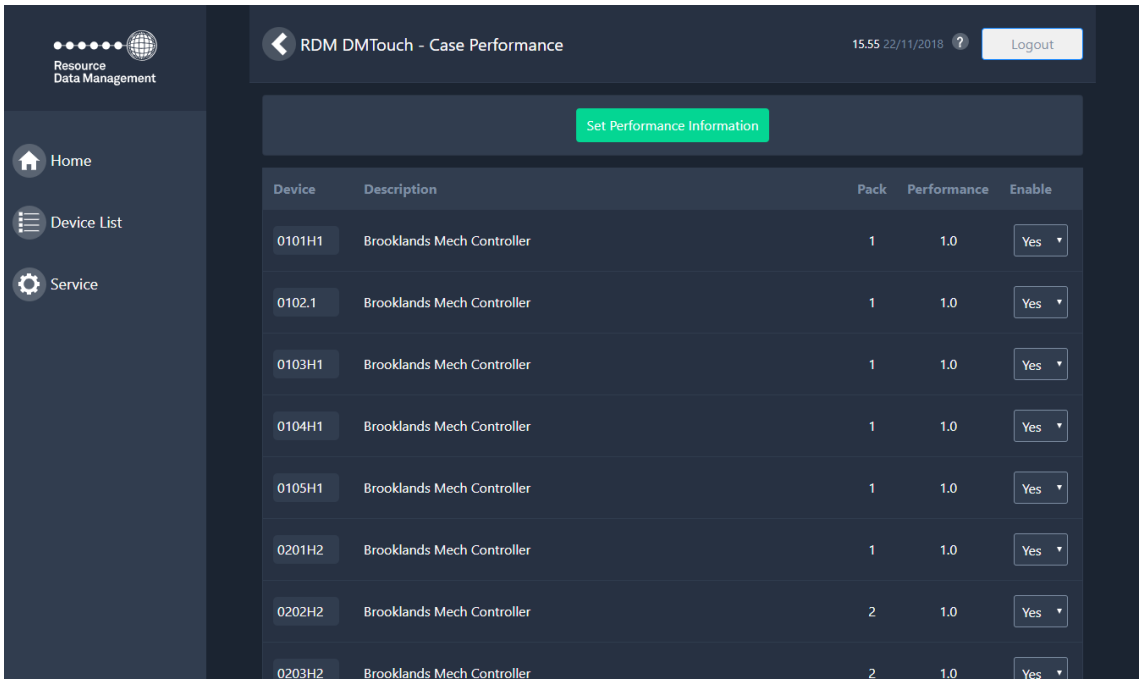
Note: The Discharge temperature source is a monitor probe only and isn't utilised by the feature.

Performance

From the Service Menu select: System/ Energy/ Performance

The performance feature, if enabled will monitor the performance of the case and assign a score. The score is based on the set-point, differential, over-temperature alarms and under-temperature alarms.

A score of 1 equates to a good performance, a score of 10 equates to a poor performance.



Within the setup page (example above), select to enable the performance check on each device. Also see Configure Sources section to confirm the features is using the correct items for each device.

Note: By holding down the Ctrl key and click on the 'Enable' heading then the case performance feature can be turned on or off for all cases.

The performance indicator is also displayed in the Device List as shown below (TPI = Temperature Performance Indicator).



If this feature is enabled on a device, then an extra parameter becomes available, 'TPI Alarm level' which has a range of 0 – 10, alerting users of cases which are under performing. The default 'Case Performance' alarm index number for each device is 6.

If the energy feature Pack Optimisation has been enabled there will be an additional column 'Pack'. This also has a similar performance indicator for each case and gives an indication as to which case is holding optimisation off. Red indicates a case holding optimisation off. Green is ok.

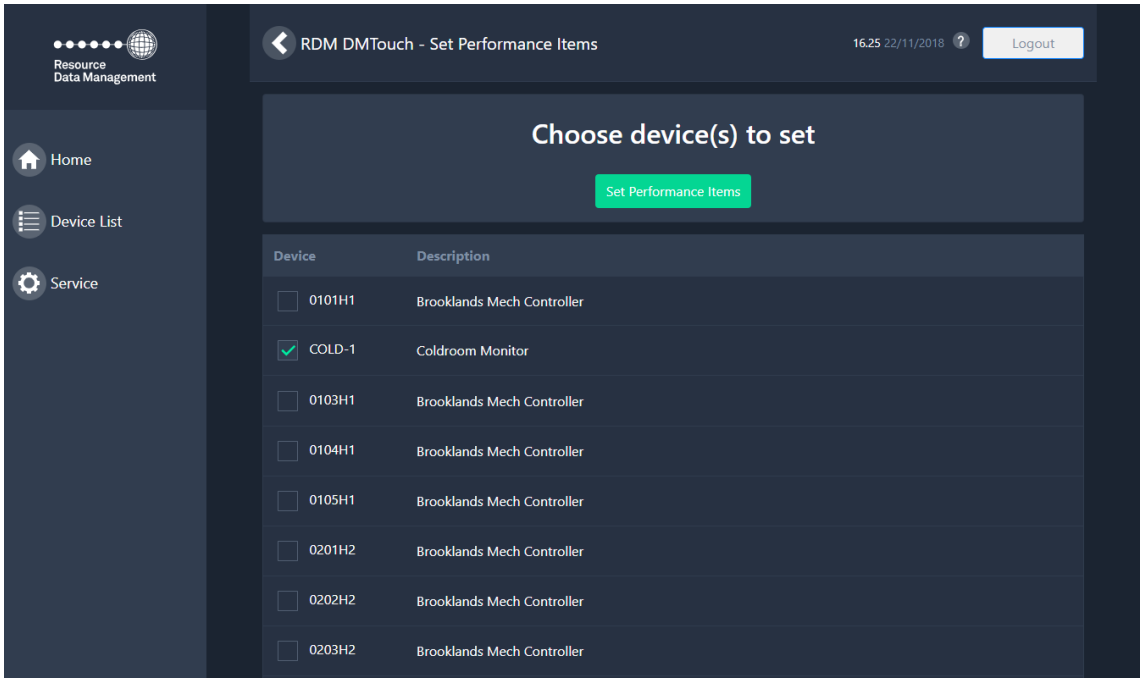
When a device is assigned to a pack then an extra parameter becomes available for that controller 'Valve Performance Alarm'. This can be used to flag up any device that has a high valve opening level (Range is 0 – 10). The default 'Valve Performance' alarm index number for each controller is 6.

Note: From DMTouch V3.1.0 and above, upon restart the last saved value (on hour and half hour) will be restored.

Configure Sources

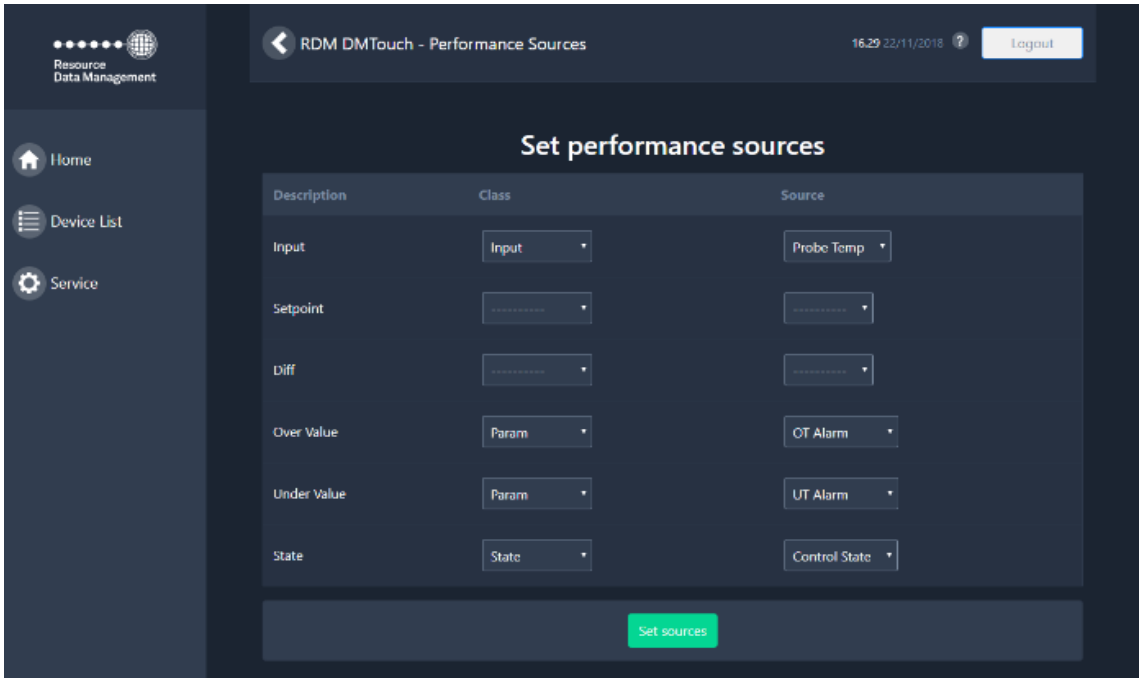
This feature allows the user to select the source of the items used to calculate the Case Performance figures. This introduces flexibility and allows the DMTouch to calculate TPI values for devices other than Mercury refrigeration controllers. One such item could be a DMTouch local temperature probe input. Click on 'Configure Source' and the screen below is shown.

The page will list all devices logged on to the DMTouch. Select the device by clicking in the 'check-box'.



Devices of the same 'type' can be selected together, if they are different, the checkbox will be greyed out. In the example, device 'COLD-1 –Cold-room Monitor' has been selected.

Once selected, click on 'Set Performance Items' and a page similar to the below will be shown.



Input: Select the source of the Temperature Input used for calculation.
Setpoint: Select the Setpoint the device is trying to maintain (If available).
Diff: Select the operating Diff of the controller (If available).
Over Value: Select upper limit e.g. Over Temperature setpoint.
Under value: Select lower limit e.g. Under Temperature setpoint.
State: Select the control state (if available). Allows the algorithm to take into account special events e.g., Defrost. Therefore, input temperature will not have an effect on the calculated performance figure during this period.

If the device has no 'setpoint' or 'diff' to select. The calculation would assume the mid-way value between the 'Over Value' and 'Under Value' as the setpoint. To calculate a performance figure, the minimum required items are 'Input', 'Over Value' and 'Under Value'.

Note: if Mercury or ML Case controllers are used with Case Performance you will not have to edit this feature.

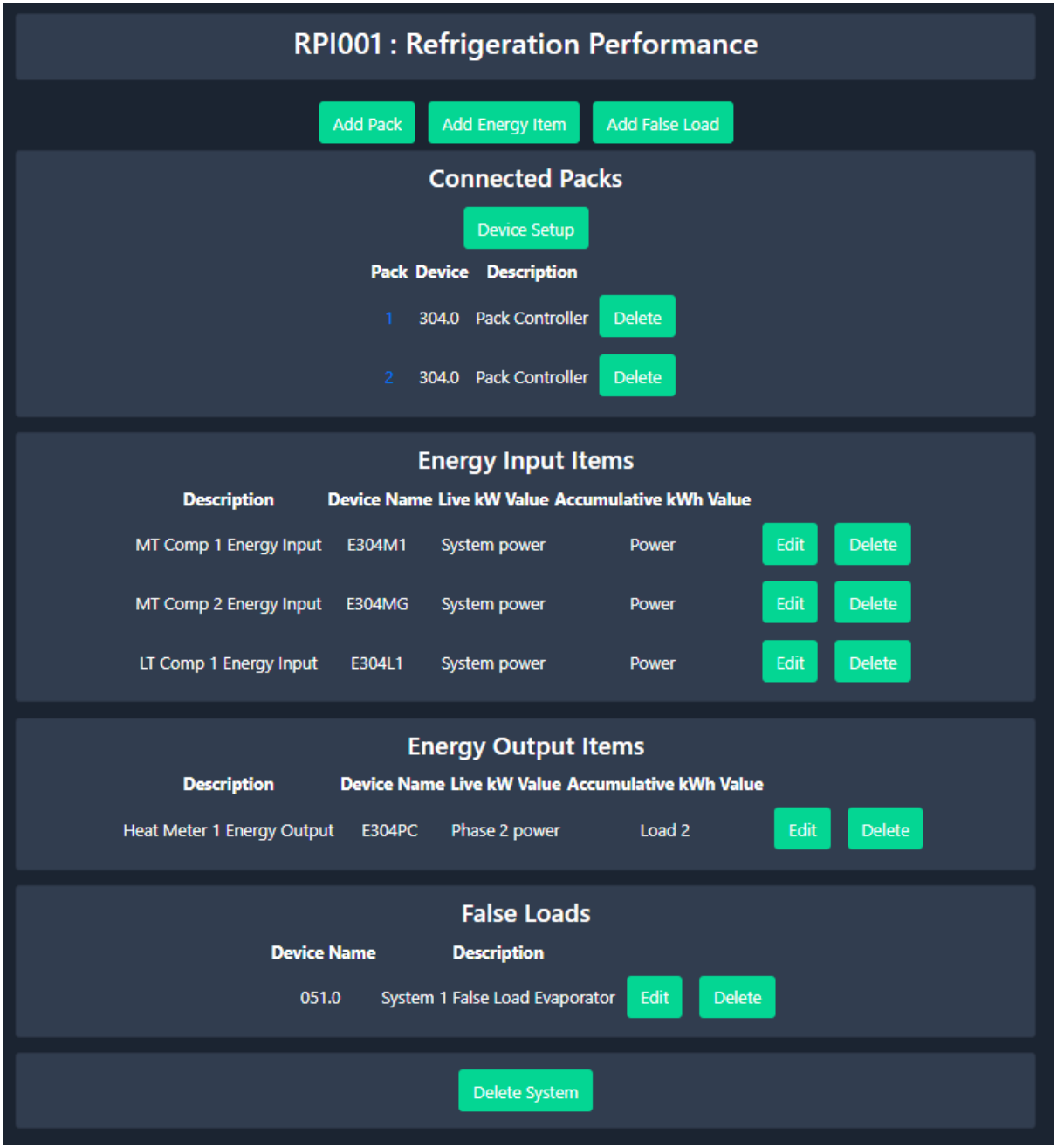
Refrigeration Performance

The Refrigeration Performance Indicator (RPI) feature allows for the measurement of the refrigeration system energy output including calculated cabinet and cold room evaporator duties, heat reclaim energy output, electrical energy input, and generates an overall electrical Coefficient of Performance (COPe) value.

This enables asset to asset, system to system, site to site comparisons, and pro-active maintenance and energy management data.

This is a separate DM Touch energy software feature and needs enabling to configure. Please contact RDM Technical Support for further information.

Below is an example of the setup screen for the Refrigeration Performance. See Appendix 11 for detailed setup instructions.



Note: This feature is not supported on the miniDM platform

Trim Control

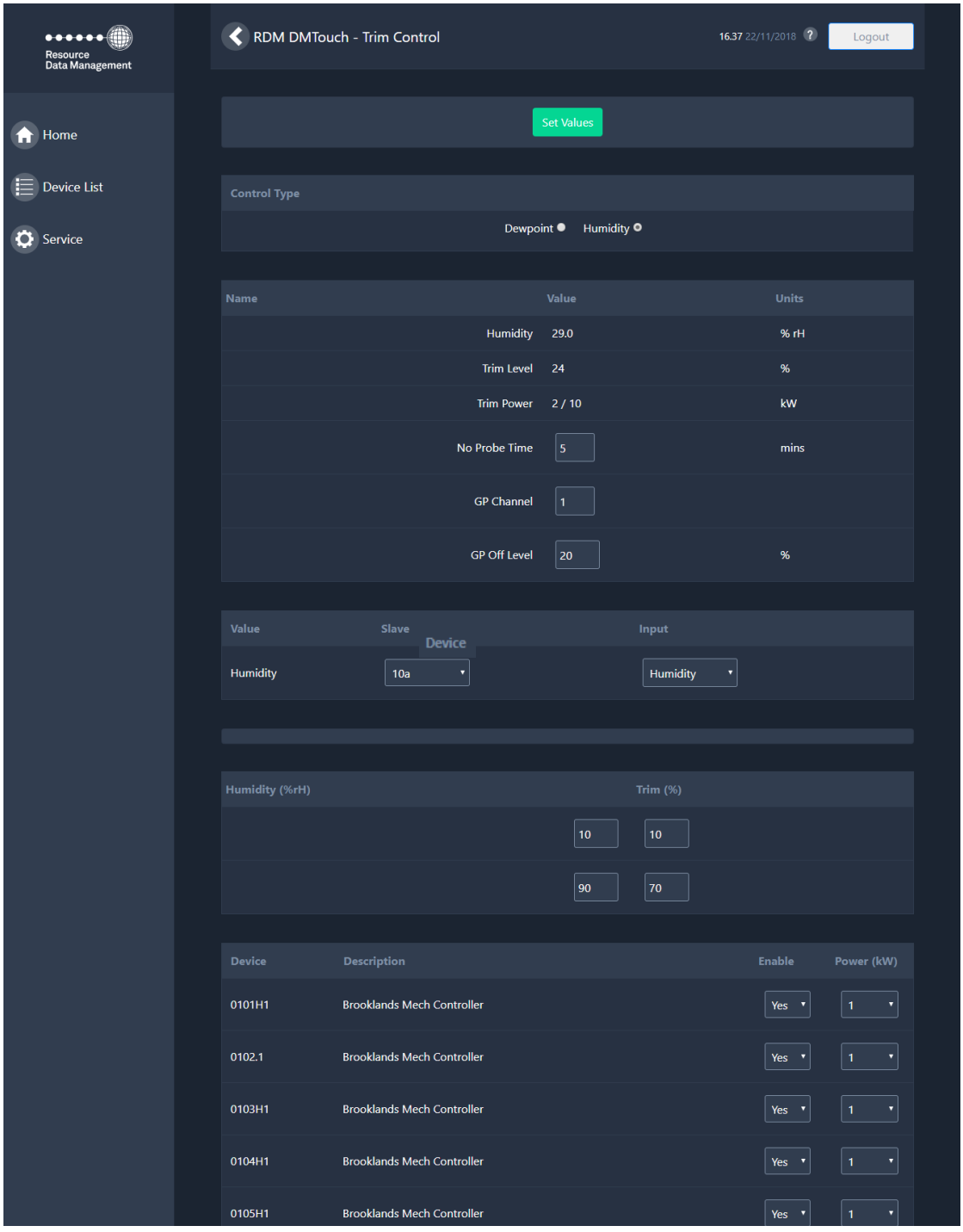
From the Service Menu select: System/ Energy/ Trim Control

Trim control can be achieved in two ways either by Humidity or Dewpoint control. Humidity control is outlined below followed by Dewpoint control.

Trim Control – Humidity

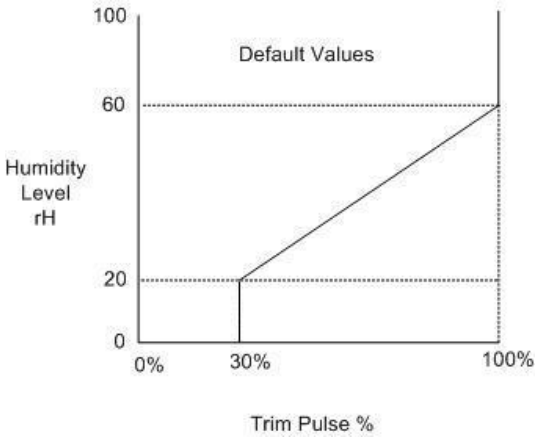
On Humidity Control, the screen will display the values of;

- Humidity
- Trim Level
- Trim Power (used power / full power)



Also shown are the various options required to configure the Trim Control. Depending on the method chosen will dictate the available options. To set up the Humidity based control alter the following settings;

Control Type: Select Humidity.
No Probe Time: Probe fault delay time (in minutes).
GP Channel: Allows a GP channel to set the trims to a pre-determined level (normally Site opening times).
GP Off Level: Trim level when the above GP channel is off.
Humidity (%rH) Source: Input – Map this to the controller that has the humidity sensor.
Humidity (%rH) Level: Minimum and maximum levels (see graph below).
Trim %: Minimum and maximum trim power (see graph below).



If the relative humidity (rH) is below its low setting, the trims will be at their low setting. If the rH is above its high setting, the trims will be at their high setting.

Between the low and high rH settings the relationship between the rH and Trim level is linear, as per the graph opposite.

DMTouch Network Trim control, when enabled, over-rides the controller's local trim level setting. The DMTouch will send network commands to the selected controllers to pulse their trim relay to the level determined by the values shown on the graph. The trim optimisation period is 5 minutes. (**Note:** if the trim maximum value is set to 70% an immediate 30% saving can be made).

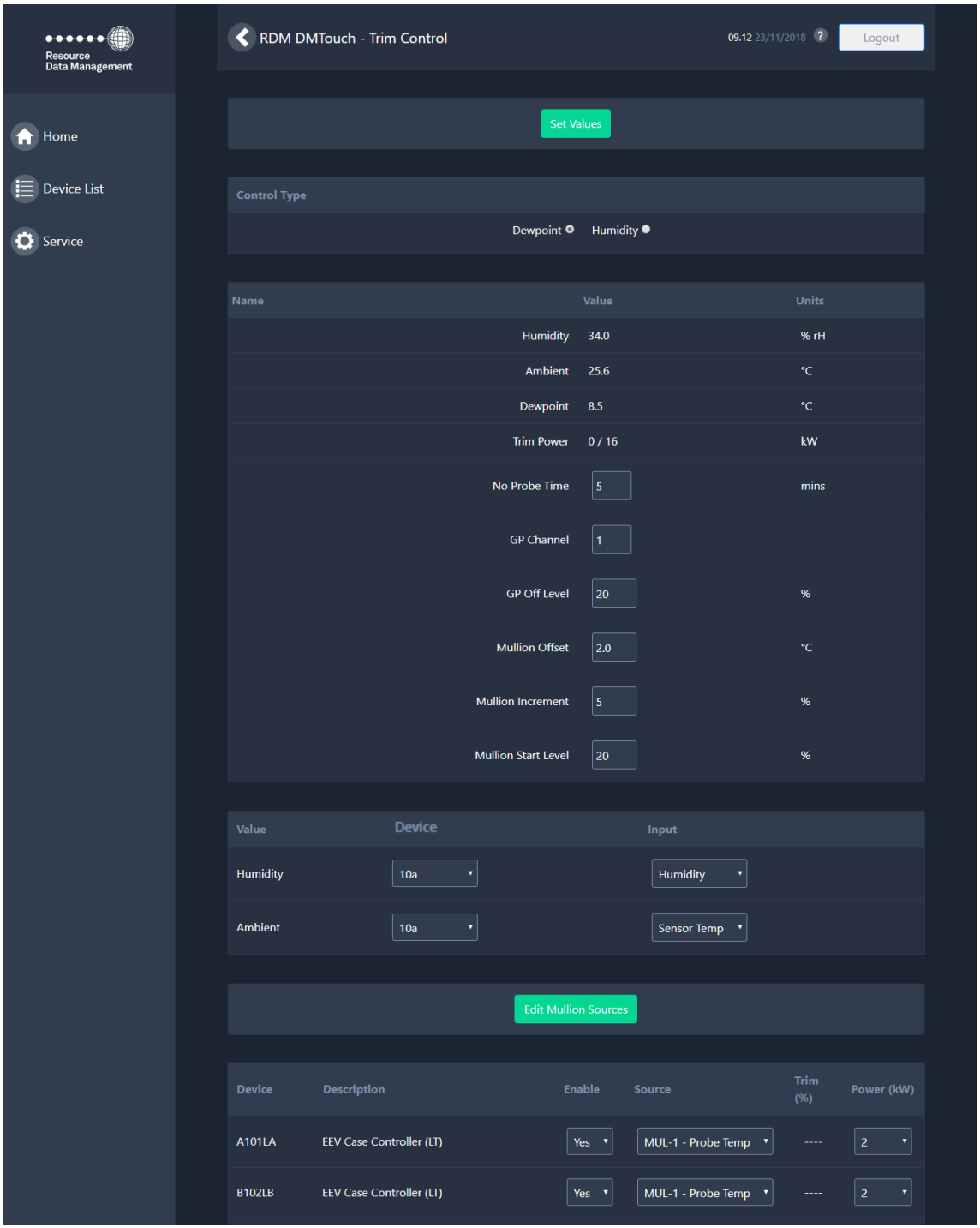
The trims can be mapped to a GP timer, for example Site trading hours. By setting the GP Timer Off percentage determines the trim output level when the GP Timer is 'Off'. This allows the user to further limit the power of the trim heaters or it can completely disable the heaters when the Site is not trading. **Note**: setting GP channel to 0 will disable this feature.

Note: If the humidity sensor fails the alarm 'Trim no probe' is generated by the System.

Trim Control – Dewpoint

The Dewpoint is calculated on a regular basis from the ambient temperature and Humidity of the surrounding area. The trims are pulsed to maintain the Mullion temperature above the calculated Dew point temperature, thus preventing condensation from forming on case doors. The DMTouch will send network commands to the selected controllers to pulse their trim relay.

Note: The mullion is the vertical part of the case door frame.



Control type Select Dewpoint.
No Probe Time Probe fault delay time (in minutes).
GP Channel Allows a GP channel to set the trims to a pre-determined level.
GP Off Limit Trim level when the above GP channel is off.
Mullion Offset Depending on the placement of the probe the mullion offset may have to be adjusted.

Mullion Increment	Percentage by which trim power is increased/decreased depending on the Mullion temperature.
Mullion Start Level	Percentage at which the trims are pulsed when Dewpoint control is started* *__Note__: This is also the percentage at which the trims will pulse should a probe fault occur.
Humidity (%rH) Source	Input – Map this to the controller that has the humidity sensor.
Ambient Temp source	Map this to a controller or DMTouch input to measure the ambient temperature.

Both of the above values are required to calculate the Dewpoint.

Trim Control – Selecting Devices

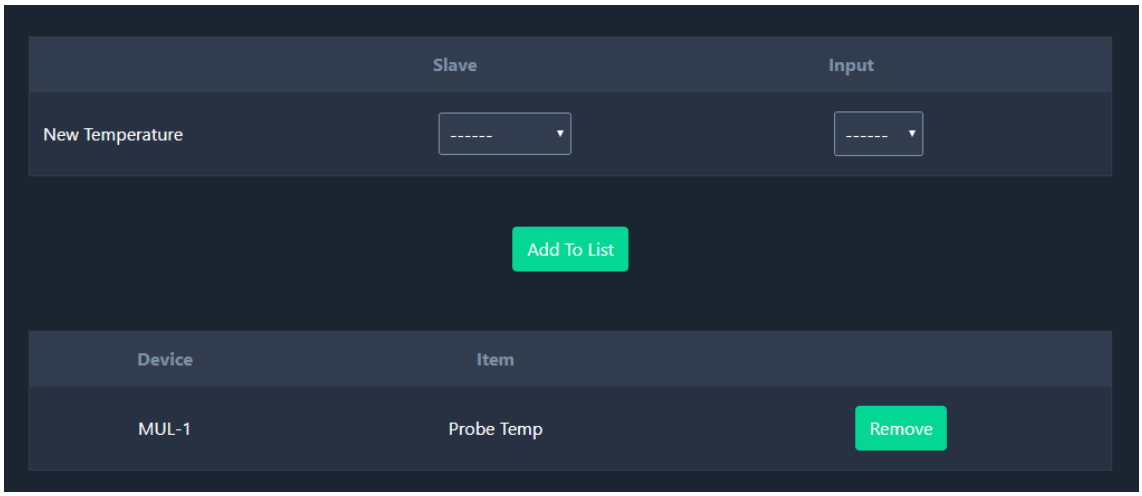
At the bottom of the Trim Setup page, it will list all devices logged on to the DMTouch. Depending on the type of control selected, the options will update.

In both control options the individual cases must be enabled to receive the trim control, use the drop-down menu besides the device to activate. Enter the power of each case trim heater in kW if known. If using Dewpoint control, select the Mullion Source from the drop-down menu (See Mullion Sources for more details).

Once configured press 'Set Values'.

Edit Mullion Sources

By clicking 'Edit Mullion Settings' the source of the Mullion temperature readings can be added or edited. For example, one of the 12 Analogue inputs that come as standard on the DMTouch could be mapped as a Mullion temperature source for a case Mullion. When trim control is enabled for a case, an additional value will appear in the controller value page which shows the trim relay percent operation.



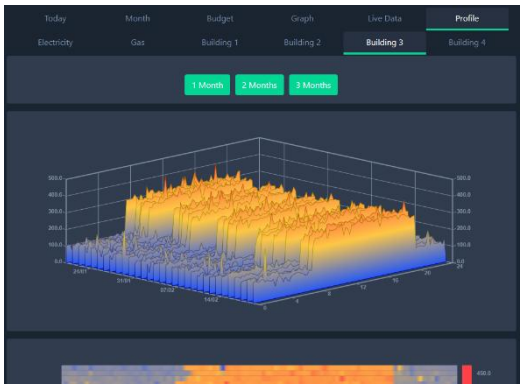
Energy Monitoring

When the Energy monitoring feature is enabled (PR0484-EMON / PR0484-MD-EMON), the DMTouch can be setup to monitor up to six sources of 'consumables' usage and display the data in a user-friendly way. It can calculate savings or overspending from the user's budget and give detailed analysis on usage. The tabulated views offer varied analysis of weekly/ monthly/ yearly usage and spending along with live data and graphing.



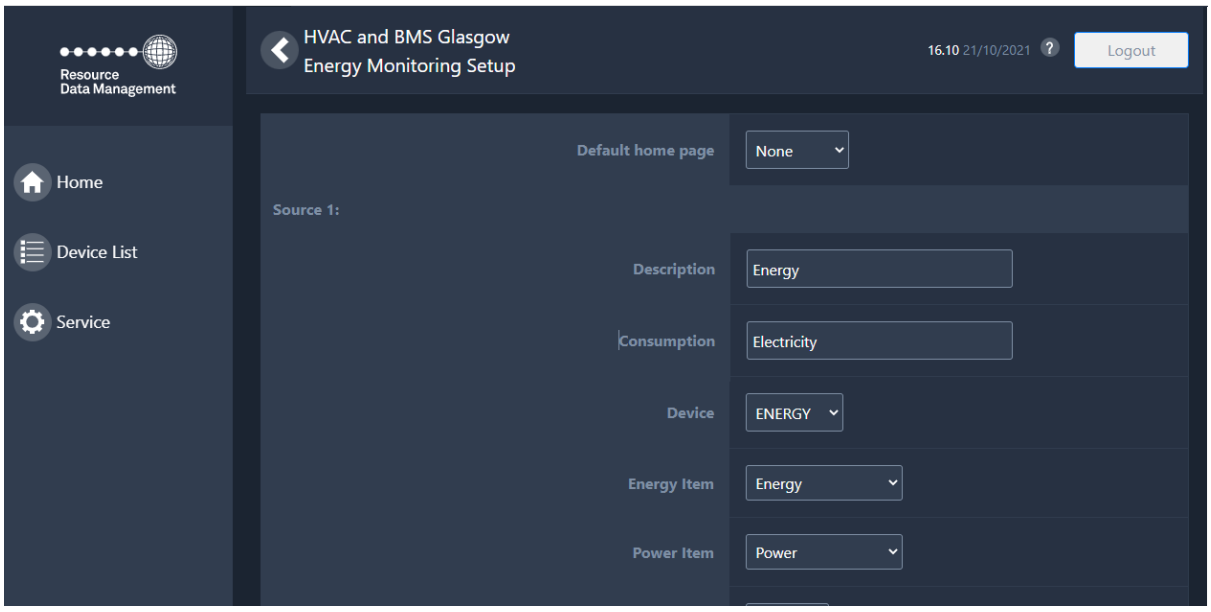






To enter the Energy Monitoring setup menu;

From the Service Menu select: System/Energy/ Energy Monitoring



The Energy Monitoring feature can be setup from up to six sources that are logged on to the DMTouch. The fields along with their descriptions, within the setup page, are listed below;

Default Home Page: Allows the user to select the 'primary' page that will be displayed upon entering the 'Energy Monitor' Home page. Choose between; Summary, Today, Month, Budget, Graph, Live Data or Profile.

Consumption: Enter the unit of energy that is being consumed.

Description: Enter a Description of the energy monitor. For example, 'Gas Usage', 'Electrical Meter 1' etc. This will be seen in the headings of the graphs and displays.

Device: Select the device the energy feature is to use to gather the data from.

Energy Item: Select the specific item the energy feature looks at to gather the 'Energy Data'. This should be the item that accumulates the total energy consumption e.g. kWhr.

Power Item: Select the specific item the energy feature looks at to gather the 'Power Data'. This should be the item that displays the real time power usage e.g. kW.

Cost: (per energy unit) Enter the cost associated to the energy unit (Energy Item). This value will be used to calculate usage costs etc.

Carbon Footprint: (kg CO2/ energy unit) Enter the weight in kg of the CO2 usage per energy unit. This is used to calculate the CO2 usage of the energy source.

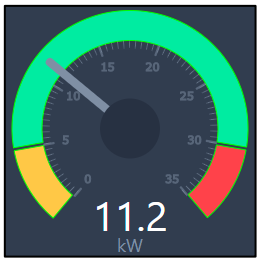
Estimated Daily: (Energy units) Enter the total estimated daily usage for the energy item. This will be used for comparison budget calculations.

Start Day: Enter the day of the month for which billing starts.

Gauge Max Power: For the 'Live Data' gauge and graphs, enter the maximum expected value of the 'Power Item'. E.g., '35' in image to the right.

Gauge Min Power: For the 'Live Data' gauge and graphs, enter the minimum expected value of the 'Power Item'. E.g., '0' in image to the right.

Gauge Red Level: For the 'Live Data' gauge and graphs, enter the level at which the gauge shows a red section. E.g., '30' in image to the right.



Gauge Amber Level: For the 'Live Data' gauge and graphs, enter the level at which the gauge shows an amber section. E.g., '5' in image.

Currency: Enter the currency symbol used. **Note**: this option is applied to all sources.

Summary Tab

The Summary tab is a general overview of the sites carbon footprint showing the amount of CO2 used for the Energy Sources. The 'foot' indicator will change colour to either green or red depending on if the amount of CO2 is below or above the estimated usage from the 'Start day'.

Today Tab

The Today tab gives an indication of the energy consumption and corresponding CO2 from midnight up until the current time. The gauges show the percentage over or under the daily target the current consumption value is.

Month Tab

The Month tab provides an overview for the current month (specified from the 'start day' up until the current time/ date). It will show the total consumption with the associated cost and CO2 usage. It will also show the budgeted values and the variance (in currency). The gauges will indicate the percentage over or under the monthly estimate the current consumption value is.

Budget Tab

Under the Budget tab Yearly, Weekly and Daily comparions to all budgeted values and previous year values are shown. The comparison can be for either the costs or the CO2 consumption. The data for each chart is taken

from the last full day's/ week's/ month's worth of data and compared to the budgeted estimates. It will then compare it to the previous year's data for the same period.

Graph Tab

For the Energy Sources it will graph the consumption Hourly, Daily and Weekly.

Live Data Tab

The Live data is a real time view of the current Power Items. The gauge (colour bands) itself is user-defined in the setup page. It will also provide real time graphs depicting the trend of the value over 15minutes and 6 hrs.

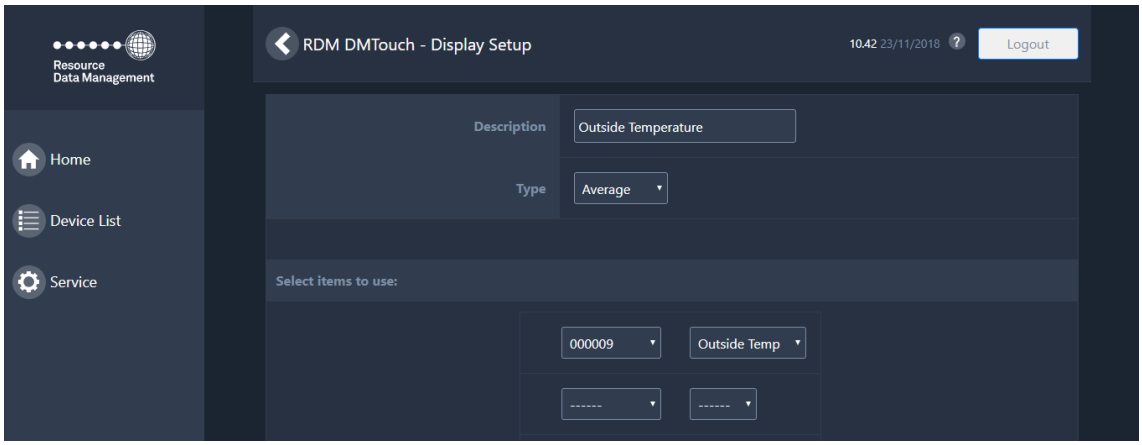
Profile Tab

The profile tab provides a 3D view of the Power item's general trend across either 1 month, 2 months or 3 months. The varying colours make it easy to see periods of high usage.

Display Setup

From the Service Menu select: System/ Energy/ Display Setup

The feature allows the user to map up to 8 items for reporting purposes. The items' values are then processed (depending on setup) to show the desired data on the home screen of both the DMTouch and the web CGI.



Description: Enter a name which best identifies the process.
Type: Select between Total, Minimum, Maximum and Average to create the processed value.
Total: The total of all items configured is used as the displayed value.
Minimum: The minimum value from the items configured is used as the displayed value.
Maximum: The maximum value from the items configured is used as the displayed value.
Average: The average of all items configured is used as the displayed value.
Items to Use: Up to 8 sources can be mapped. Select the device and item required for use.
High Alarm: When the process value is above this limit and the Alarm delay has expired a High Alarm is created. Onscreen text colour changes to Red at this point. Alarm Index number 4.
High Warning: When the process value is above this limit and the Warning delay has expired a High Warning alarm is created. Onscreen text colour changes to Orange at this point. Alarm Index number 8.
Low Warning: When the process value is below this limit and the Warning delay has expired a Low Warning alarm is created. Onscreen text colour changes to Orange at this point. Alarm Index number9.
Low Alarm: When the process value is below this limit and the Alarm delay has expired a Low Alarm is created. Onscreen text colour changes to Red at this point. Alarm Index number 5.
Warning Delay: Delay applied to High/Low Warning alarms. Set to 0 to disable alarm feature.
Alarm Delay: Delay applied to High/Low Alarms. Set to 0 to disable alarm feature.

Note: When no alarms are present the process value text colour is shown as Green.

When the feature is enabled a system device entitled DISPLAY appears in the Device List. If a fault occurs on anyone of the items e.g., a probe failure, then it is discounted until the fault is rectified.

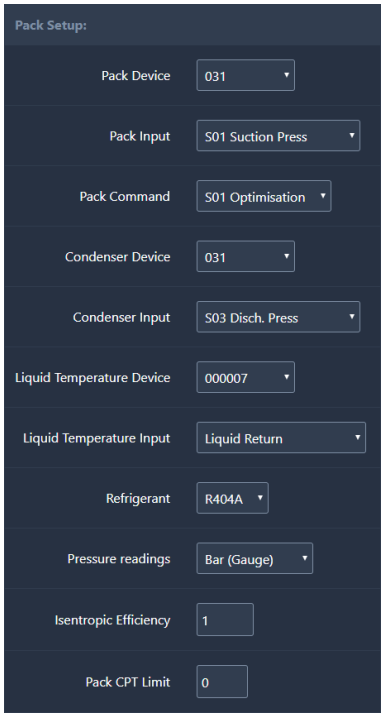


CoP (Coefficient of Performance)

The CoP feature provides useful information on how well a system is performing and provides a real time pressure/enthalpy graph for individual fixtures (evaporators). The CoP tab, shown above, will appear on the controller overview page (see: Device Values Page).



In order to carry out the CoP calculations, the DMTouch requires certain pressure and temperature readings as well as certain system information, such as refrigerant gas type. This information is entered in the pack setup page (See: Pack Setup).



Pack Device: Selects the pack controller to be used in the CoP calculations.

Pack Input: Selects the suction pressure input on the pack controller.

Condenser Device: Selects the condenser controller used in the CoP calculations.

Condenser Input: Selects the discharge pressure input on the condenser controller.

Liquid TemperatureDevice: Selects the device which has the liquid temperature probe fitted.

Liquid Temperature Input: Selects the individual probe being used for liquid temperature measurement.

Refrigerant: Selects the gas type being used.

Pressure Readings: Selects the units Bar or Psi and Gauge or Absolute.

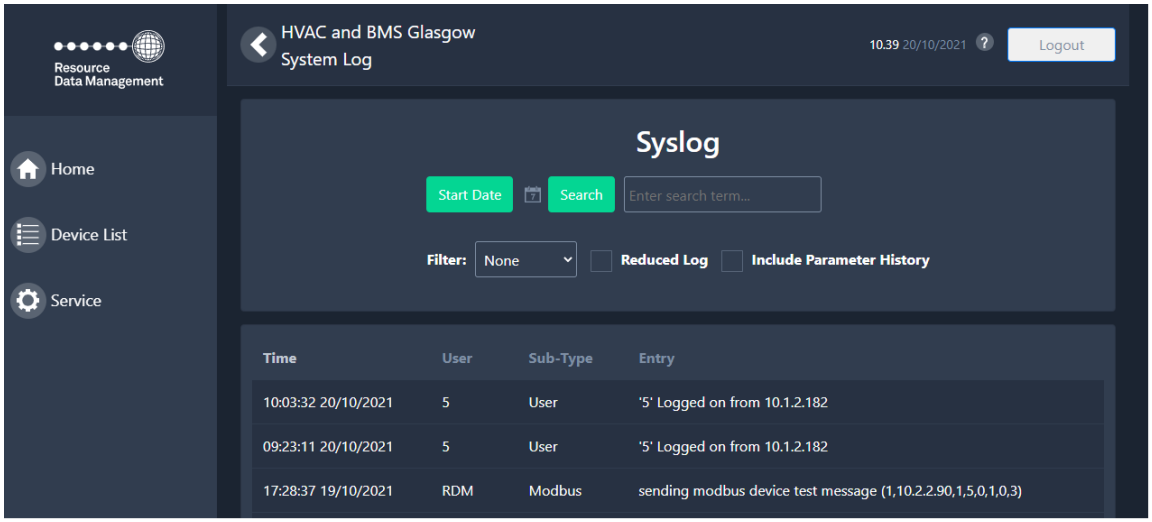
Isentropic Efficiency:This is the ideal value and will normally be quoted by the compressor manufacturer.

Information

System Log

From the Service Menu select: System/ Information/ System Log

This page allows the System Log to be viewed. Details of logins, parameter changes and any system amendments will be listed.



Using the fields at the top of the page the system log can both be filtered by entry type (e.g. user, alarms etc),by specific time period and to include parameter history. The log can also be searched for specific items. Scrolling down the page will automatically update the time period that is currently being viewed.

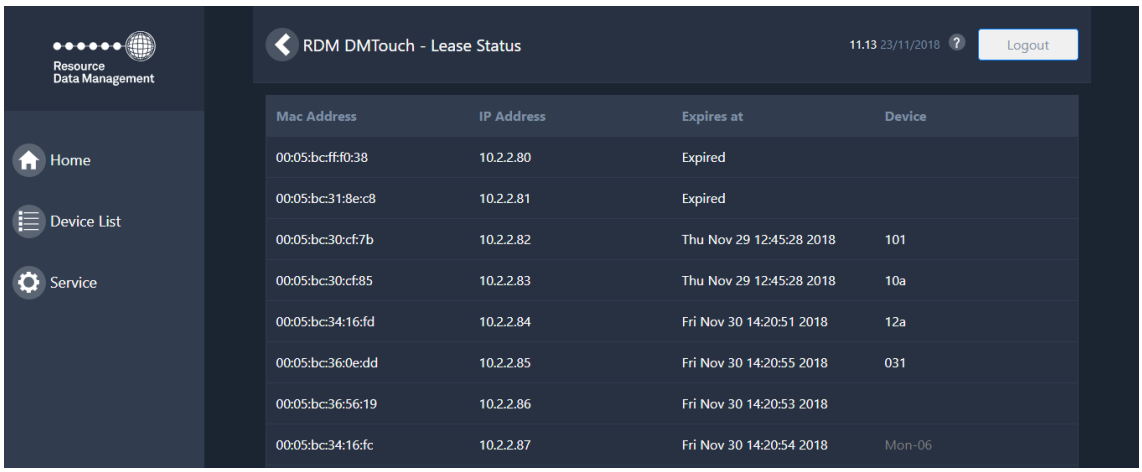
Software Version

This shows the current software version of the DMTouch. Within the page, all Legal details are available.

DHCP Information

From the Service Menu select: System/ Information/ DHCP Information

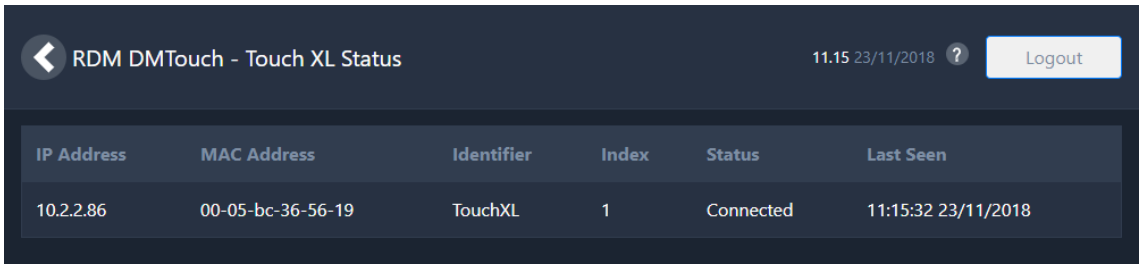
Table of device information: Mac Address, IP address, Expiry Time and device name. A device's name which is greyed out is a hidden device. Please see Hide Device feature.



Touch XL Status

From the Service Menu select: System/ Information/ TouchXL Status

The table shows a list of TouchXL Orbit consoles, with network details and their current status, attached to the DMTouch.



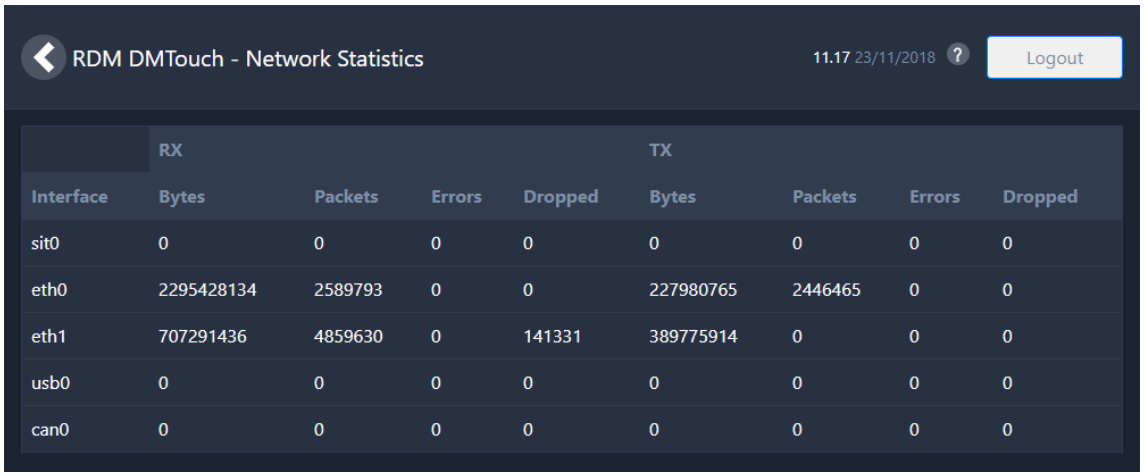
IP Address	MAC Address	Identifier	Index	Status	Last Seen
10.2.2.86	00-05-bc-36-56-19	TouchXL	1	Connected	11:15:32 23/11/2018

Note: Not available on miniDM platform.

Network Statistics

From the Service Menu select: System/ Information/ Network Statistics

Table shows information relating to the 'transmit and receive' information for the different networks (i.e. Local, USB and Ethernet ports). It shows how many bytes and packets have been sent and received and if there have been errors or communication issues.

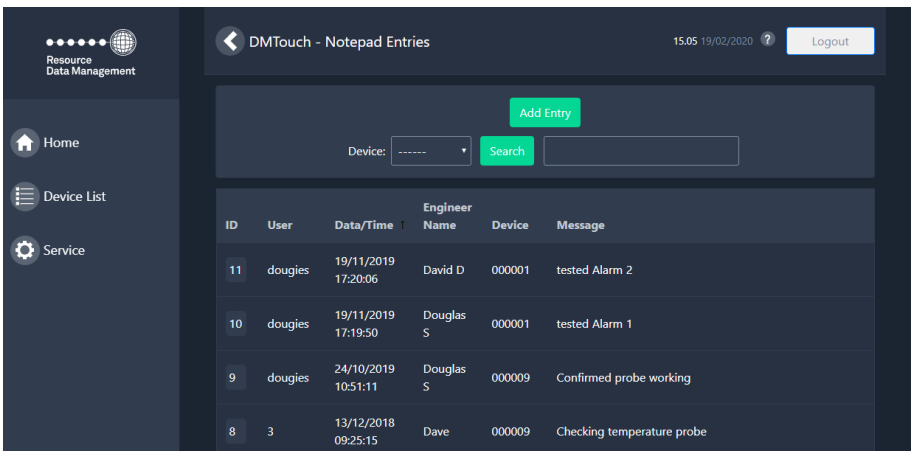


	RX				TX			
Interface	Bytes	Packets	Errors	Dropped	Bytes	Packets	Errors	Dropped
sit0	0	0	0	0	0	0	0	0
eth0	2295428134	2589793	0	0	227980765	2446465	0	0
eth1	707291436	4859630	0	141331	389775914	0	0	0
usb0	0	0	0	0	0	0	0	0
can0	0	0	0	0	0	0	0	0

Notepad

From the Service Menu select: System/ Information/ Notepad

The notepad feature allows users to insert comments on to the DMTouch (e.g. any work carried out, site specific issues or any ongoing issues with the panel or devices).

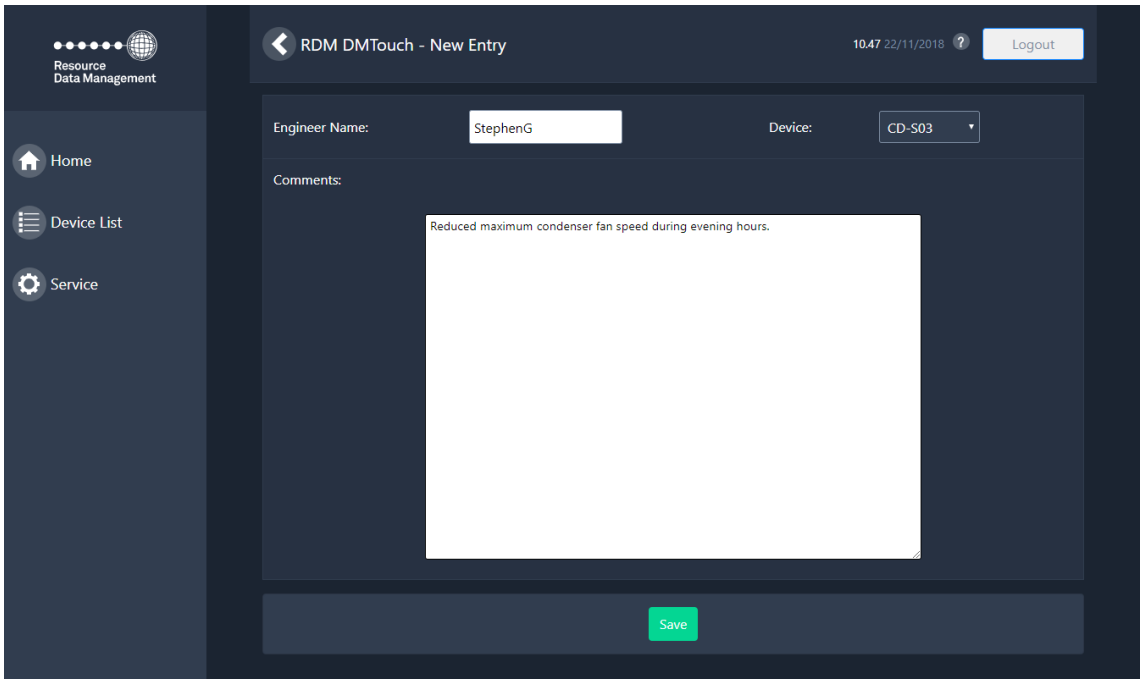


Entering the page will list all previous entries in the table. Clicking on the headings of the table will order the entries into ascending or descending. Notes can be filtered by device using the drop-down menu and also searched for using the Search field.

To view a previous comment, click on the ID number, this will allow the user to edit* or delete the note.

***Note:** Only the 'owner' of the note can edit or delete the entry. For configuring the access to the Notepad section, please consult the Site Setup section.

To add a note, click on the 'Add Entry' button.

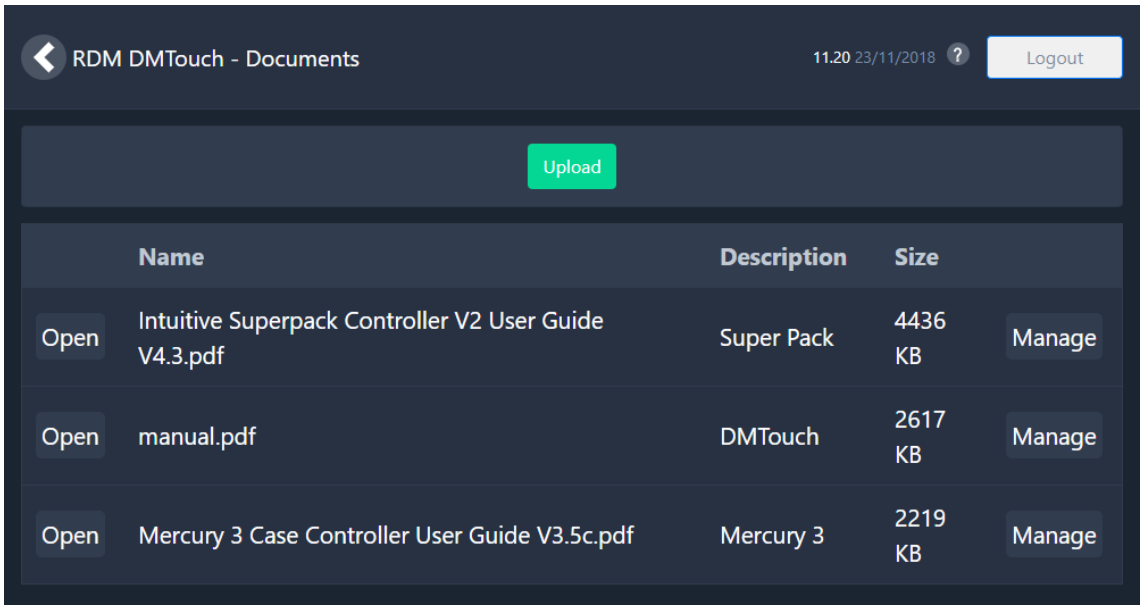


Complete the fields where necessary and add the requred comment, then click 'Save'. The note will be inserted into the table of Notepad Entries.

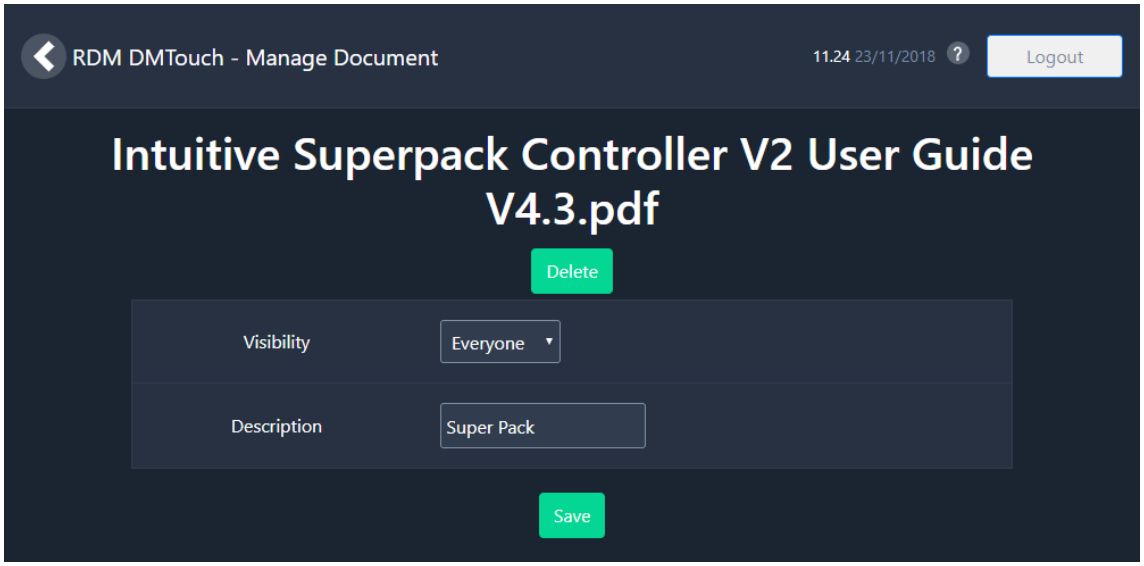
Documents

From the Service Menu select: System/ Information/ Documents

This feature allows the user to upload and manage pdf documents so they are viewable within the DMTouch.



The Documents page will look similar to the above screen when accessed. The 'Manage' options will only be visible when the user logs in with an 'install' access level. When clicked, the 'manage' button will show options;



Within the 'Manage Document' page, the document chosen can be permanently deleted by clicking on 'Delete'. The access level, to which the document can be viewed, is selectable by using the 'Visibility' drop down menu (Site, Service, Install or Everyone) and a description can also be given to the document.

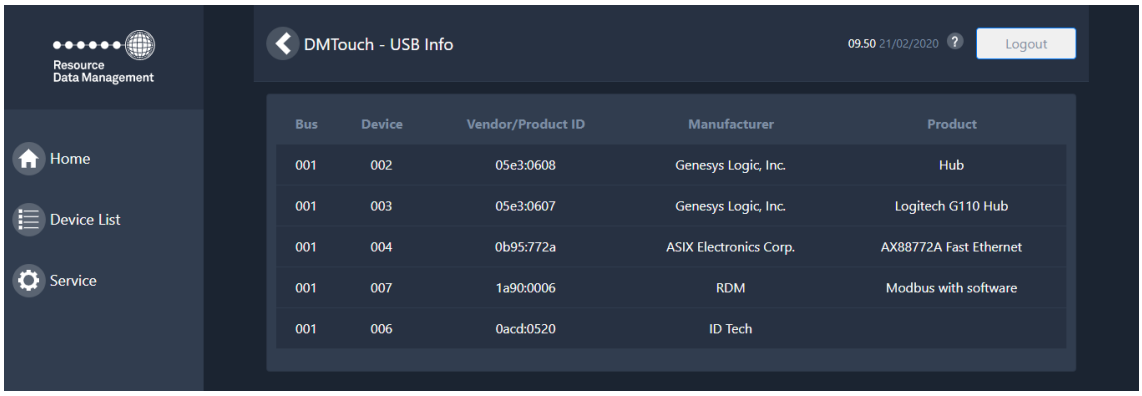
This section is not available on the miniDM.

Note: The Documents feature, only supports files in pdf formats. There are no limitations to the number of documents however they will utilise the space on DMTouch's SSD memory.

USB Info

From the Service Menu select: System/ Information/ USB Info

This page will detail all USB connections to the DMTouch



Layouts/ Custom Home Screen

Custom Home Screen

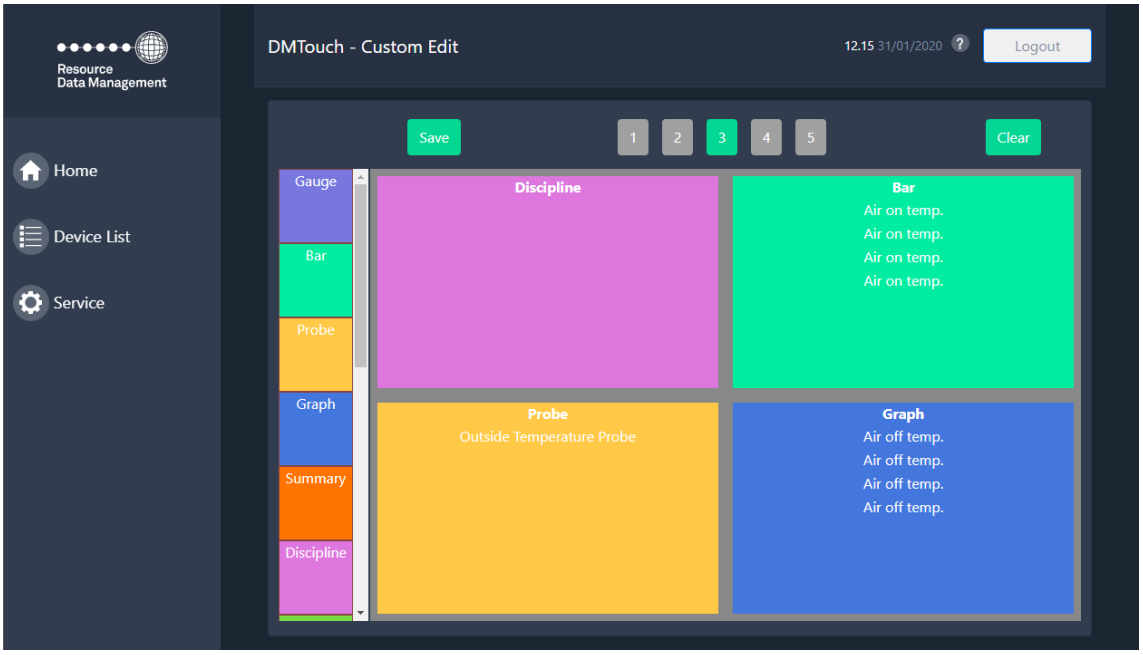
From the Service Menu select: System/ Layouts/Custom Home Screen/ Custom Home Screen

When configured, the DMTouch Home screen will default to show the Custom Home Screen. An example is shown below.



The user can use the arrows at the bottom of the page or swipe left and right to navigate the pages.

Upon entering the Setup page, if nothing has been configured, it will show a blank page with the options listed.



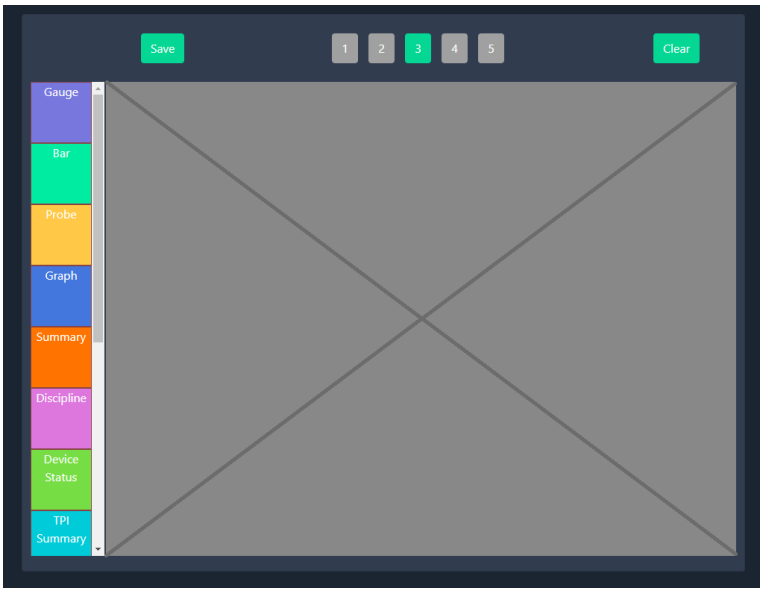
Up to 5 individual pages and 20 widgets in total can be created, to edit a page click on the page number at the top. If any previous pages have been setup, the 'Clear' button will remove all widgets.

As default, page 3 will be set as the default landing when viewing the Custom Home Screen, to select another right click on the page number (at top) and select 'Make Default'.

Once the Custom Home page has been completed, the user must click on 'Save' to confirm changes.

To create a custom page the icons listed on the left of the viewing pane can be dragged and dropped to the desired location. The widget will be automatically sized depending on its position on the page and how many other widgets there are. Generally, when placing items, the below graphic will aid as to the positioning of the dragged item.

For example, dragging a single widget on to the area will populate the entire space. Drag a second into one of the below quadrants will 'shift' the others accordingly.



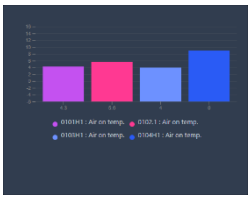
Once placed, the widgets' properties box will show allowing the items (where necessary) to be configured. To edit the widgets there after, either double click or right click on them and select 'Properties'. Some types of widget will have different settings to configure (e.g. Gauge), others will have no settings (e.g. TPI Summary). Details of them all are below;

Gauge



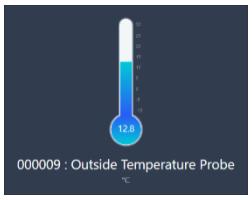
Device: Select from the drop-down menu the device for the value to be used.
Item: Select from the drop-down menu the item from the device to be used.
Min: Minimum value the gauge will show.
Max: Maximum value the gauge will show.
Low: The low limit that outlines the lower band of the gauge.
High: The High limit that outlines the high band of the gauge.
Low Band: Select from the drop-down menu the colour the Low band will have.
Main Band: Select from the drop-down menu the colour the Main band will have.
High Band: Select from the drop-down menu the colour the High band will have.
Device Extra: Select from the drop-down menu an optional extra device that a value can be displayed from.
Item Extra: Select from the drop-down menu the extra value.

Bar



Device 1-4: Select from the drop-down menu the device for the value to be used. Up to 4 devices can be chosen.
Item 1-4: Select from the drop-down menu the item from the selected device to be used. Up to 4 items can be chosen.
Colour 1-4: Select from the drop-down menu the colour to be associated to the bar.
Min: Minimum value the chart will show, select either an item from the device list or manually type a value.
Max: Maximum value the chart will show, select either an item from the device list or manually type a value.

Probe



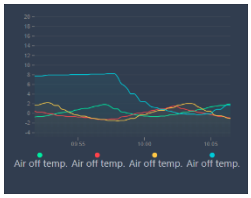
Device: Select from the drop-down menu the device for the value to be used.

Item: Select from the drop-down menu the item from the selected device to be used.

Min: Minimum value the probe will show, select either an item from the device list or manually type a value.

Max: Maximum value the probe will show, select either an item from the device list or manually type a value.

Graph



Period: Select the frequency the graph updates values. The higher the period set the greater the overall time period the graph shows. Select between; 15s, 1min, 5min, 15min, 30min and 1hr.

Then select if the graph should use 'Absolute' values or 'Relative'.

Min: Minimum value the graph will show.

Max: Maximum value the graph will show.

Device 1-4: Select from the drop-down menu the device for the value to be used. Up to 4 devices can be chosen.

Item 1-4: Select from the drop-down menu the item from the selected device to be used. Up to 4 items can be chosen.

Note: If only one item is being graphed, the current value will also be displayed on the widget.

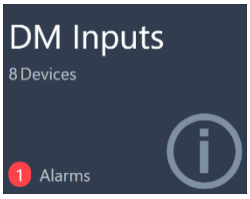
Summary



Device: Select from the drop-down menu the device for the value to be used.

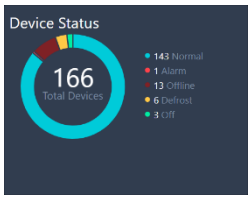
Item: Select from the drop-down menu the item from the selected device to be used.

Discipline



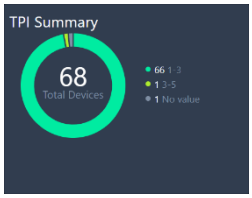
Discipline: Select from the drop-down menu the Discipline to be shown in the summary information.

Device Status



Provides a summary of all devices logged on to the DMTouch.

TPI Summary



Provides a summary of TPI's of devices logged on to the DMTouch.

Alarms



Category: Select from the drop-down menu the category the alarm mimic will report.
All: Any alarm on the DMTouch will be listed.
Device: Select a specific device to monitor.
Discipline: Select a specific discipline to monitor.

The Alarms widget will show a quick view of the most recent alarms, the size of the window or number of other widgets will dictate how many alarms are listed.

Status



Device 1-4: Select from the drop-down menu the device for the value to be used. Up to 4 devices can be chosen.
Item 1-4: Select from the drop-down menu the item from the selected device to be used. Up to 4 items can be chosen.
Colour Off 1-4: Select from the drop-down menu the colour to be associated to the status when in the 'Off' state.
Colour On 1-4: Select from the drop-down menu the colour to be associated to the status when in the 'On' state

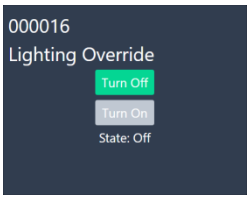
Logo



Settings: Use the 'Change' option to choose an image from a local device (PC), then click 'upload' where a thumbnail of the image will be shown and then click 'ok'to confirm the change. Only images of the type; png, jpeg, gif can be used with a maximum size of 250KB.

Note: Only one logo can be used on the customised home pages.

Override



Device: Select from the drop-down menu the device to be used.
Item: Select from the drop-down menu the item from the selected device to be used.

Note: The Override mimic can only be associated to an 'Override' block used within TDB running on the DMTouch.

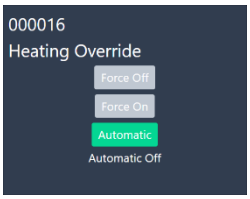
Slide



Device: Select from the drop-down menu the device to be used.
Item: Select from the drop-down menu the item from the selected device to be used.

Note: The slide mimic can only be associated to a 'slide' block used within TDB running on the DMTouch.

Threeway



Device: Select from the drop-down menu the device to be used.
Item: Select from the drop-down menu the item from the selected device to be used.

Note: The Threeway mimic can only be associated to a '3-way' block used within TDB running on the DMTouch.

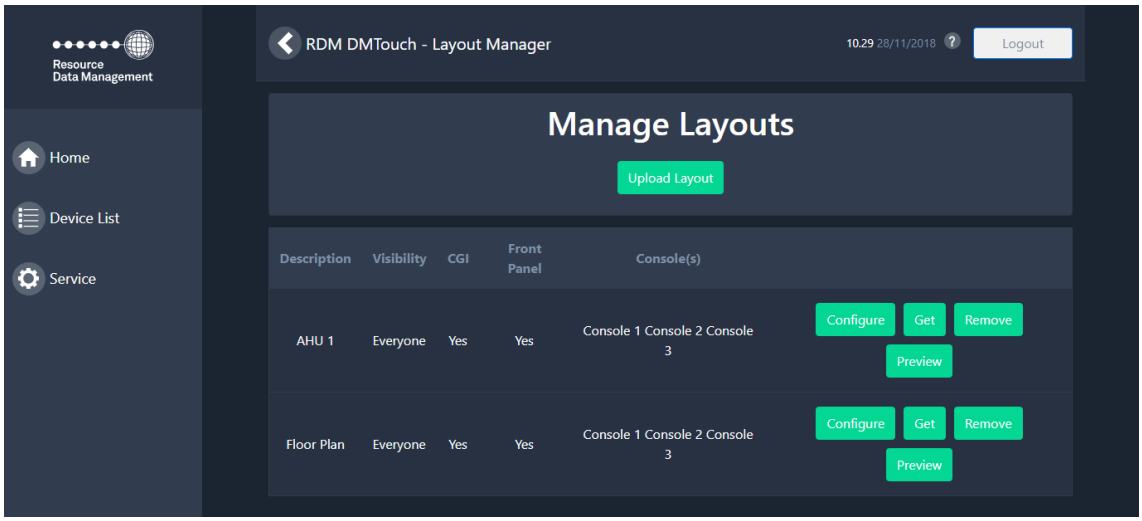
Note: **The viewing of the custom home screen on a mobile phone is device dependent and mimics will not display on mobile phones on DMTouch V3.3 or later.**

Manage Layouts

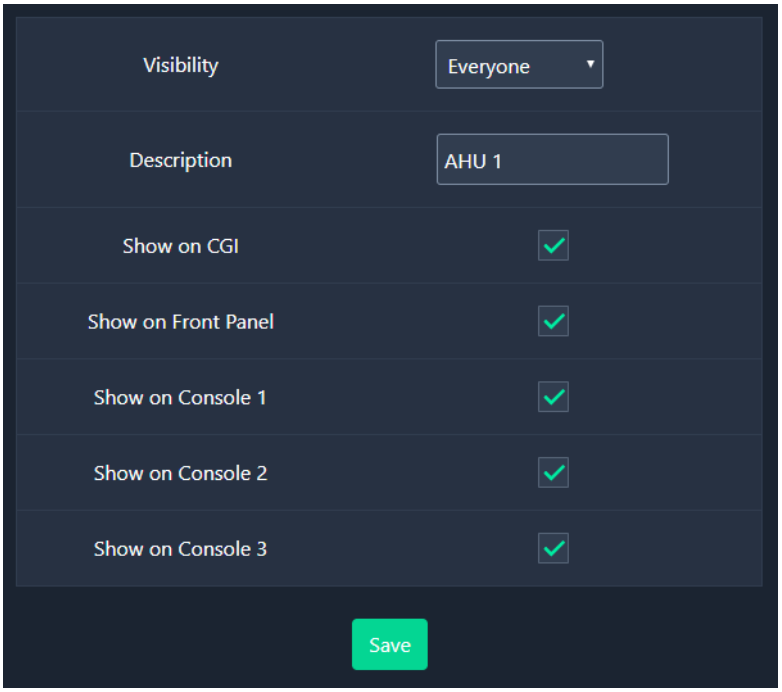
From the Service Menu select: System/ Layouts/Custom Home Screen/ Manage Layouts

This utility is used to upload and configure multiple pre-prepared layouts created on the RDM Layout editor program. To upload a layout, click on 'Upload Layout' and select it from within your PC.

Note: for more information on creating layouts, please consult relevant documentation or your RDM accounts manager.



Once uploaded, the layout can be configured to restrict viewing access to user levels, web CGI, Front End Panel and consoles. To edit these restrictions, click on 'Configure'.



Within the 'Configure' page, the options are as follows;

Visibility: Select which user level or specific user, can view the layout. For all users to view, leave as 'Everyone'.

Description: Add a description to the layout. **Note**: If none is entered, the layout tab will be aliased 'Layout'.

Show on CGI: Select this option to make layout visible on the web interface (via PC).

Show on Front Panel: Select this option to make layout visible on the DMTouch's screen.

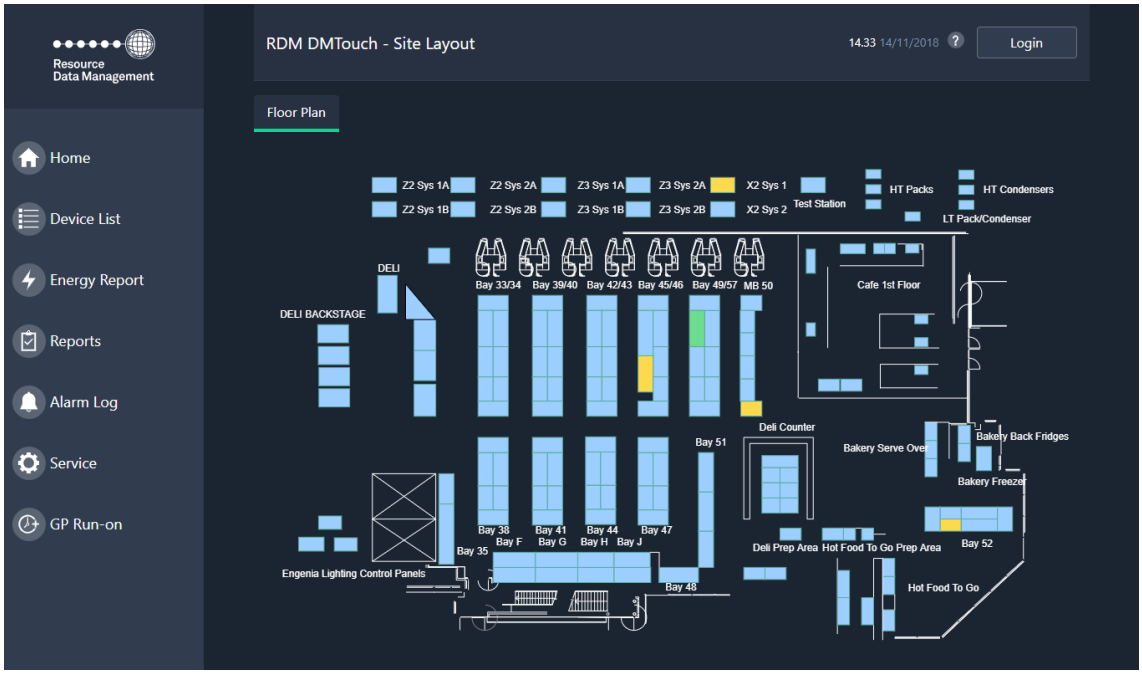
Show on Console 1-3: Select this option to make layout visible on connected TouchXLs.

Note: The order the layouts are displayed is based on the layout description. As such, if there are multiple layouts, the first layout tab will be the one that comes first alphabetically

The other options within the Manage Layout pages are;

Get	This option allows the layout to be downloaded to the user's PC.
Remove	Select this option to permanently remove the layout from the DMTouch. **Note: Once removed the layout cannot be recovered.**
Preview	Use this option for a quick view of the selected layout without leaving the setup page.

When uploaded to the DMTouch, a layout can offer a visual indication of all the devices' current states. When devices are 'associated' to the objects within the layout (see layout editor user guide), the object's colour will change according to the state. For example, red would indicate an alarm condition, yellow a defrost state and blue normal. Instantaneous device values are also displayed on the layout diagram.



Note 1: When viewing layouts directly on a DMTouch V1, only the first layout with 'Show on Front Panel' ticked will be visible. When viewing layouts directly on a DMTouch V2 and above, the first 4 layouts with 'Show on Front Panel' ticked will be visible.

Note 2: Only DMTouch V2.6 and above will support layouts with coloured backgrounds.

Note 3: The name of a Layout must contain less than 59 characters.

Note 4: Layouts for the miniDM must not exceed 16MB

Miscellaneous

System Restart

From the Service Menu select: System/ Miscellaneous/ System Restart

Use this to reset the DMTouch.

System Dump

From the Service Menu select: System/ Miscellaneous/ System Dump

This is a utility to save the system information to a file, it will hold information on device parameters, aliases, alarm setup, network settings etc. On entering the page, it will allow the user to download to a local machine. If the user is using the Touch screen, a USB can be used.

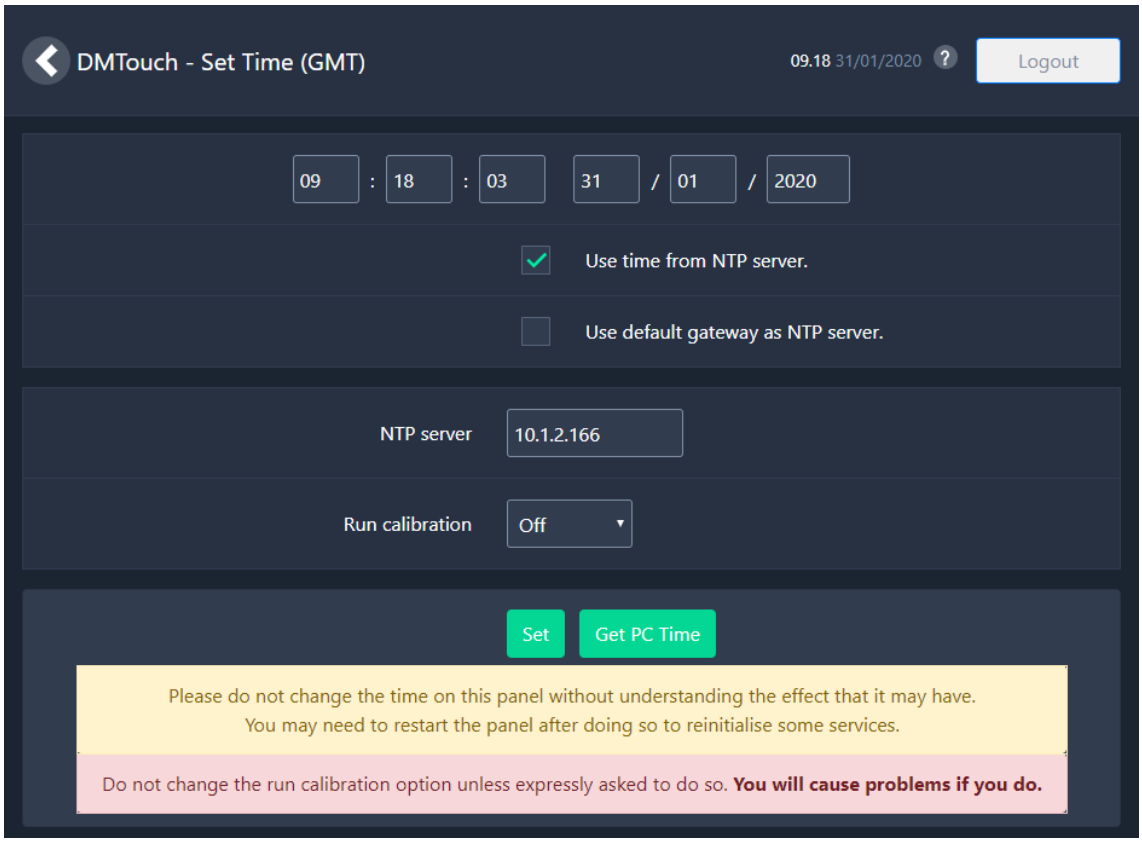
Note: See Appendix 10 for System Dump instructions using Windows 11.

Set Time

From the Service Menu select: System/ Miscellaneous/ Set Time

Here the current time and date can be entered or if the 'Get PC Time' is used the fields will be filled using the current time and date from the PC/ Laptop. It is recommended that the user restart the panel when altering the time or date manually.

Note: the 'Time-zone' option, found under site setup, should be changed if the DMTouch is in a location other than the default zone 'Europe, London' before editing the time and date via this page.



If the option 'Use time from NTP Server' is ticked then the IP address of an NTP time server can be entered. The DMTouch will then periodically synchronise with the NTP server's time/date. If 'Calibrate' is selected then over the course of an 8-hour period the DMTouch will calibrate its Real Time Clock (RTC) with the NTP server.

Any updates to the DMTouch time will show in the system log, from V3.1.0 and above the log will also show the time it was updated from.

Note: you must seek the permission from the owner of the NTP time server before directing the DMTouch to it.

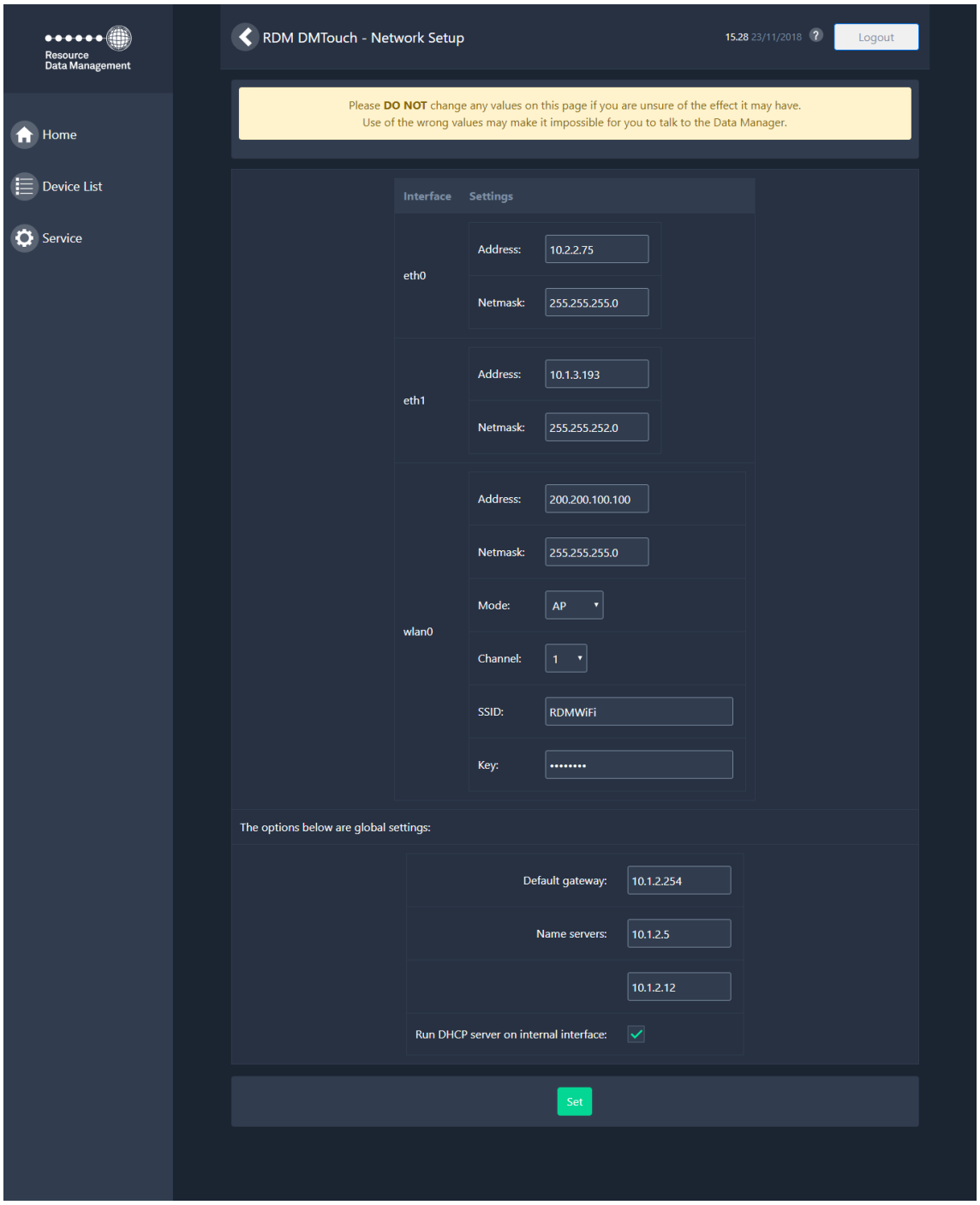
Clear Consoles

From the Service Menu select: System/ Miscellaneous/ Clear Consoles

This feature is generally only required for use by RDM. Use this feature when adding a new TouchXL to a DMTouch network if the new TouchXL has been assigned an IP address but will not connect to the DMTouch.

Network Card Setup

From the Service Menu select: System/ Miscellaneous/ Network Card Setup



Entering the Network card setup page will result in a page similar to the above. Here the user can configure the network settings on all connections.

Eth0

'Eth0' refers to the Ethernet ports located on the DMTouch's network card. This can be either 3 or 4 ports depending on the configuration ordered. The default IP address of the DMTouch is 10.1.2.75 with subnet mask 255.255.255.0. If there is no secondary IP network adapter connected or it has not been enabled then this screen will display 'eth0'details only. When checked, the DHCP server will operate on eth0 (only) issuing IP addresses in its range (10.1.2.x). Uncheck the 'Run DHCP server' if the primary Ethernet port is used to connect the DMTouch to another system.
Note: Not running DHCP will prevent IP controllers automatically coming online.

Eth1

When a secondary IP network adapter has been ordered (PR0486) and inserted into one of the USB ports on the DMTouch, the fields to configure 'eth1' will be shown. The network Address, Netmask and Default Gateway are assigned by the end user. This will vary depending on the site IT configuration.

Name Servers

The name server is used by the mail setup page and the Auto Export feature (when configured to use FTP), should the server address be entered as a URL (as oppose to an IP address). Enter either a single name server address or enter two name server addresses to provide a primary and secondary connection should the primary be unobtainable.

DHCP Server Detected

If the DMTouch detects another DHCP server operating on its primary IP network, Eth 0, then a DHCP server detected alarm will be generated. The DMTouch will also stop its own DHCP server. The alarm will clear and the DMTouch DHCP server will resume normal operation once the other DHCP server has been removed from Eth 0.

USB Analogue Modem

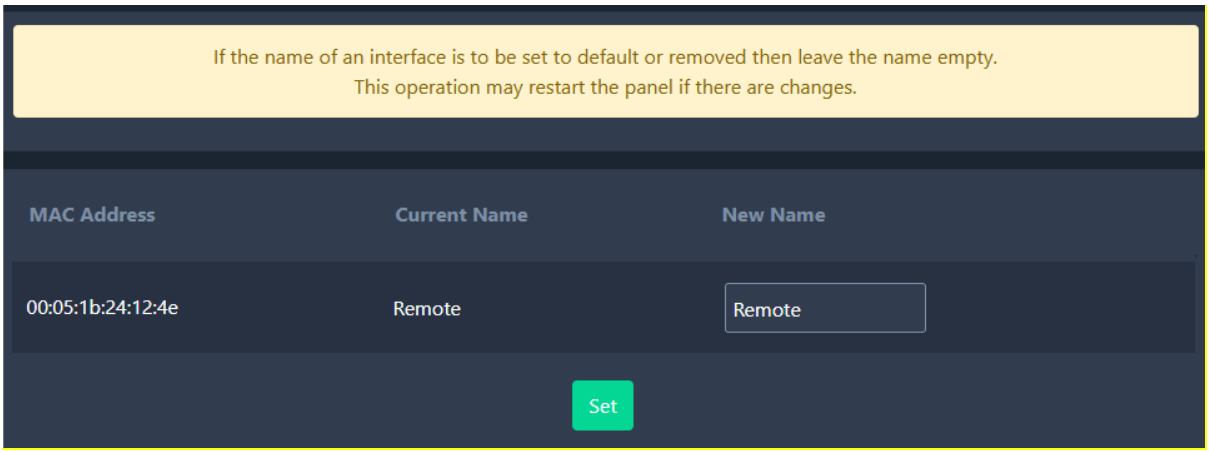
The DMTouch can be used with a USB analogue modem. This device is plug and play and therefore no setup is required. Part number for the modem is PR0491. Information can be viewed on the modem via the site setup page. Please consult RDM sales for more information.

Network Name Setup

From the Service Menu select: System/ Miscellaneous/ Network Name Setup

This screen enables the user to modify the name of any connected Secondary IP adapters (PR0486) for easier identification.

Note: The panel associates each name with the MAC address of the adapter. If an adapter is replaced, the new device will need to be re-named.



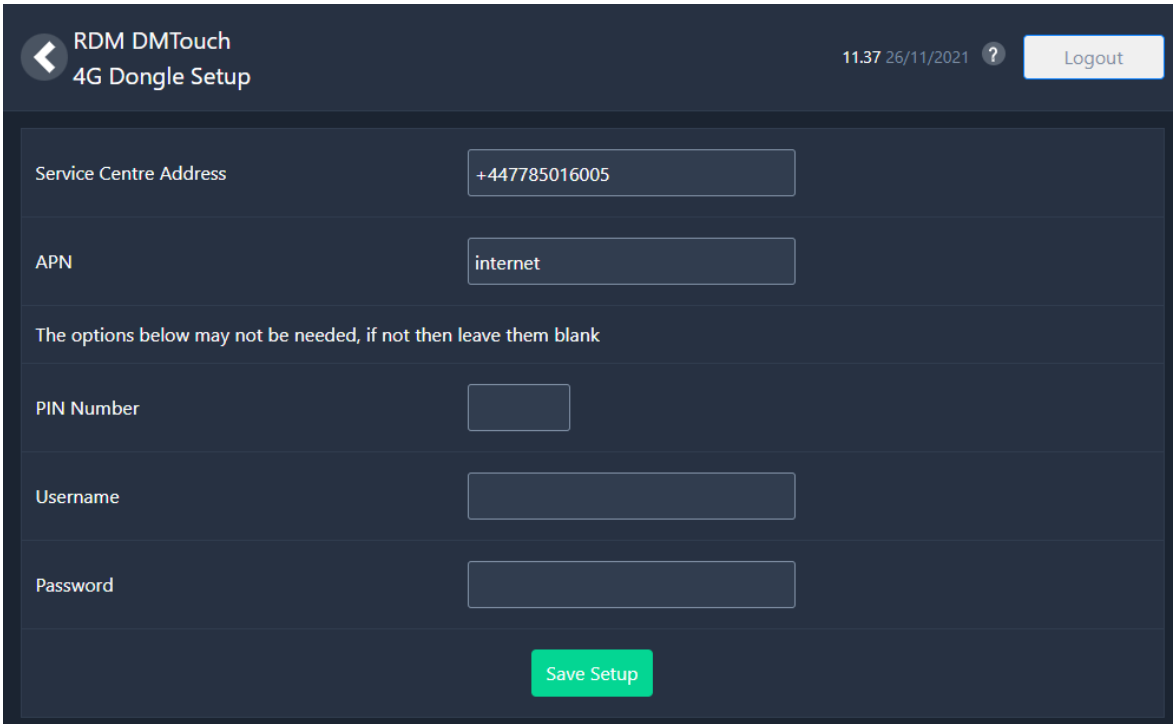
4G Dongle Setup

From the Service Menu select: System/ Miscellaneous/ 4G Dongle Setup

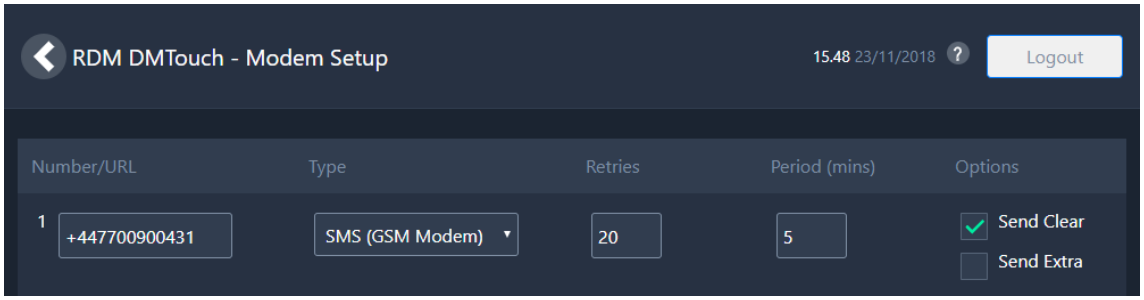
A USB GSM modem is currently supported for only sending an alarm as an SMS. This page must be filled in for the GSM modem to operate correctly and the details required and can be found by contacting the service provider. Below is an example with Vodafone details entered. **Note:** these details may be changed at any time by the service provider.

Note: The DMTouch can only support either the analogue modem **or** the 4G modem. Both cannot be used at the same time.

This feature is only supported on the DMTouch and on software 4.2 or above.



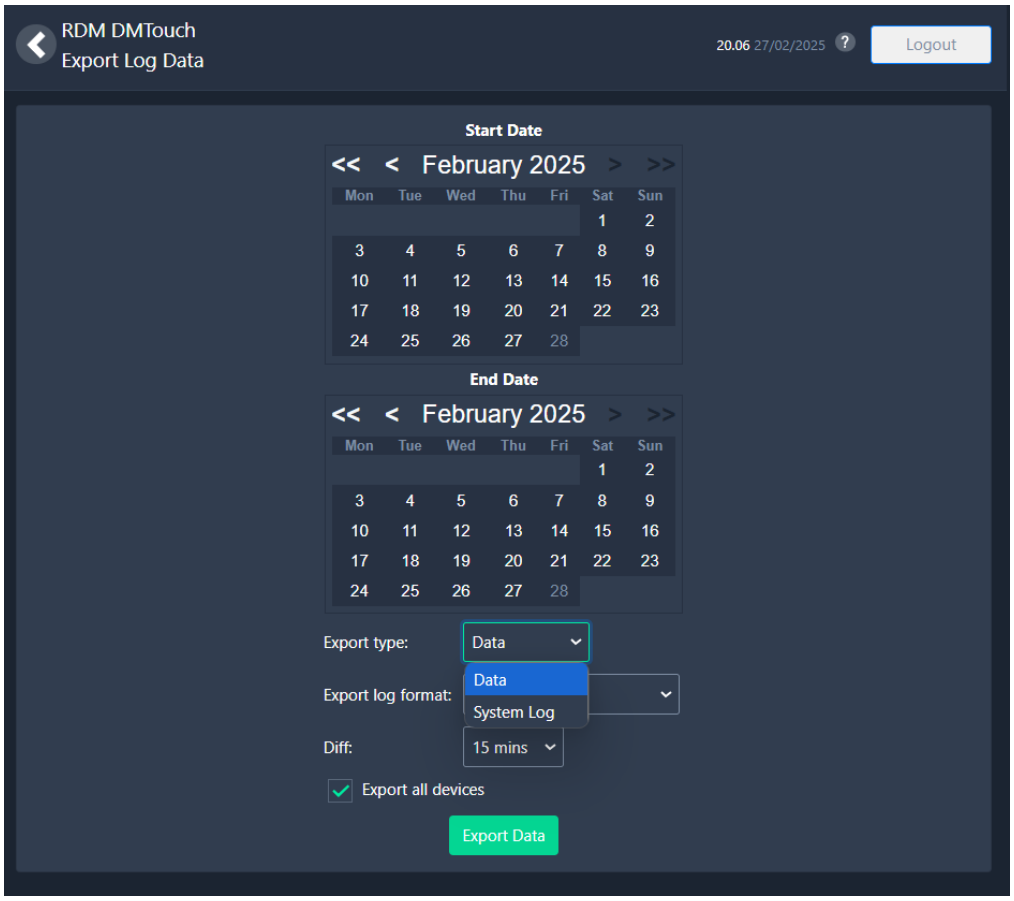
In order to send text messages, the number for them to be sent must be entered into the modem setup page (shown below). Enter the number, along with the type set to 'SMS (GSM Modem)'. See the Modem Setup section for more details.



Export Log Data

From the Service Menu select: System/ Miscellaneous/ Export Log Data

This feature allows logged data to be downloaded to a file that can be saved locally, wither on a connected PC or from the DMTouch screen with a USB connected.



Users can navigate to the specific dates by using the buttons above each calendar:

Click **<** for previous month	Click **>** to advance 1 month
Click **<<**for previous year	Click**>>** to advance 1 year

When in the correct year/ month, click on the specific start and end dates.

From the "Export Type" dropdown menu, select either "Data" or "System Log.".

From the Export log format drop-down menu, select the format the data is to be downloaded in. The options are; CSV, CSV split Date/ Time, XLSX, Signed XLSX*, HTML.

*__Note__: Using the option 'Signed XLSX' will append a Resource Data Management digital signature to the data. The signature certifies the identity of the Data Manager and protects the integrity of the data. If the document is edited, the digital signature will be removed.

The interval data samples can be set at 15 seconds, 1 minute, 5 minutes, 10 minutes, 15 minutes, 30 minutes and 60 minutes. Please note that saved data may be 'thinned' depending on the settings within Site Setup.

The user can choose to 'Export all devices', logged on to the DMTouch from the timeframe selected, using the check box option. Or if this option is un-ticked the user will be presented with a selection box listing all devices logged on the DMTouch. At this point a single device can be selected or by pressing and holding the 'Ctrl' key on the PC keyboard multiple devices can be highlighted for export. Once selected click 'Add device', which will add the selected devices to list to export.

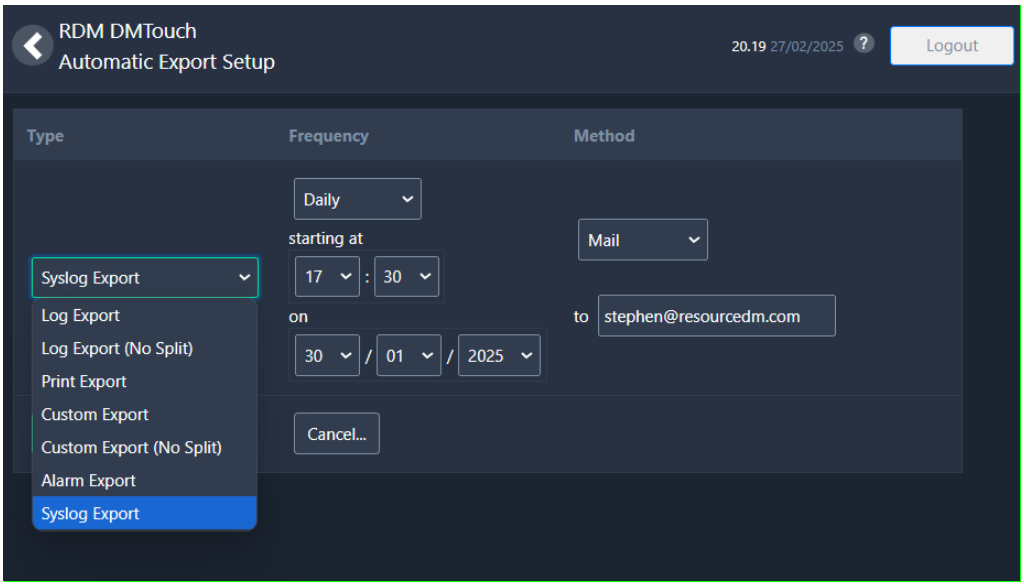
Once the options have been chosen, click 'Export Data'.

Automatic Export Setup

From the Service Menu select: System/ Miscellaneous/ Automatic Export Setup

This feature allows for logged data to be sent to a remote destination periodically. On viewing the page, a list of the current automatic export schedules will be shown. If no schedules have been configured then 'No export jobs currently defined' will be displayed.

Click 'Add New Job' to create a new automatic export schedule. A screen similar to the below will be shown.



Type: Select between Log, Print, Custom Export, Alarm, Syslog;

Log Export Data is sent as CSV files. The file format sent will be a compressed CSV file with split date/ time.

Log Export (No Split) Data is sent as CSV files. The date/ time will not be split.

Print Export Data is sent as raw text. Print export is advantageous when using the mail option as the recipient can immediately print the data from the email to obtain a hard copy.

Custom Export Data is sent as CSV files. Selecting this option expands sub menus offering the user the option to select specific devices and furthermore, items (from the selected device). Only the selected devices/ items will be extracted and sent in the data 'packet'.

Custom Export (No Split) Produces the same export as above, without the date/ time split.

Alarm Export Data is sent as CSV files. This allows the export of the alarm log only.

Syslog Export Data is sent as CSV files. This allows the export of the system log.

Frequency: Select either 5mins, 15mins, 30mins, hourly, 4 hourly, 12 hourly, Daily, Weekly and Monthly from the drop-down list. Now enter a start time and date. Please note sample frequencies below;

5 min frequency: 1-minute samples, **15 min frequency**: 1-minute samples
30 min frequency: 5-minute samples, 4**hr+ frequency**: 15-minute samples

Note: The automatic export feature is designed for backing up historic data for record keeping purposes. As a result, the exported data may not be sent immediately at the scheduled export time, but rather some time afterward, depending on the selected export frequency.

Method: Select from;

Mail: Send the data as part of an email. **Note**: The mail server must be configured.

FTP*: Send data using the File Transfer protocol. See format below.

HTTP Post*: Send data using the post function of the HTTP protocol. Enter the URL/ IP address of the server that can accept such posts.

HTTPS Post*: Send data using the post function of the HTTPS protocol. Enter the URL/ IP address of the server that can accept such posts.

***Note**: Prior knowledge of function is required and RDM cannot support setup of a receiving server. Also, when sending to a URL, the name server must be completed.

Format of FTP: username:password@host/path/
e.g., support: 12345@10.1.2.10/receiver/log/

Note: Username and password must not contain and non-alpha numeric characters (}[#>).

The file format sent will be a compressed CSV file with split date/ time.

Note 1: If the data held within the DMTouch does not match the current type of the device, the entry will not be sent.
Note 2: If the automatic export should fail, it will continue to retry, incrementing the period of time between retries each time.

Delete Type File

From the Service Menu select: System/ Miscellaneous/ Delete Type File

The page will list all self-generating 'Type files' the DMTouch has used to communicate with devices. Click the radio button next to the type file to be deleted and click 'Delete Type'. The type file will reload after the reset.
Note: Unused Plant TDB files are deleted on restart of the DMTouch. The DMTouch supports over 4000 active type files. For more information on Type Files please contact RDM Technical Support.

Upgrade Software

From the Service Menu select: System/ Miscellaneous/ Upgrade Software

This can be done using a software update file stored on a PC or from a USB stick plugged straight in to the DMTouch. Use the 'Choose File' option to select the file and click 'Send File'. Please consult RDM Sales for details on software upgrades.

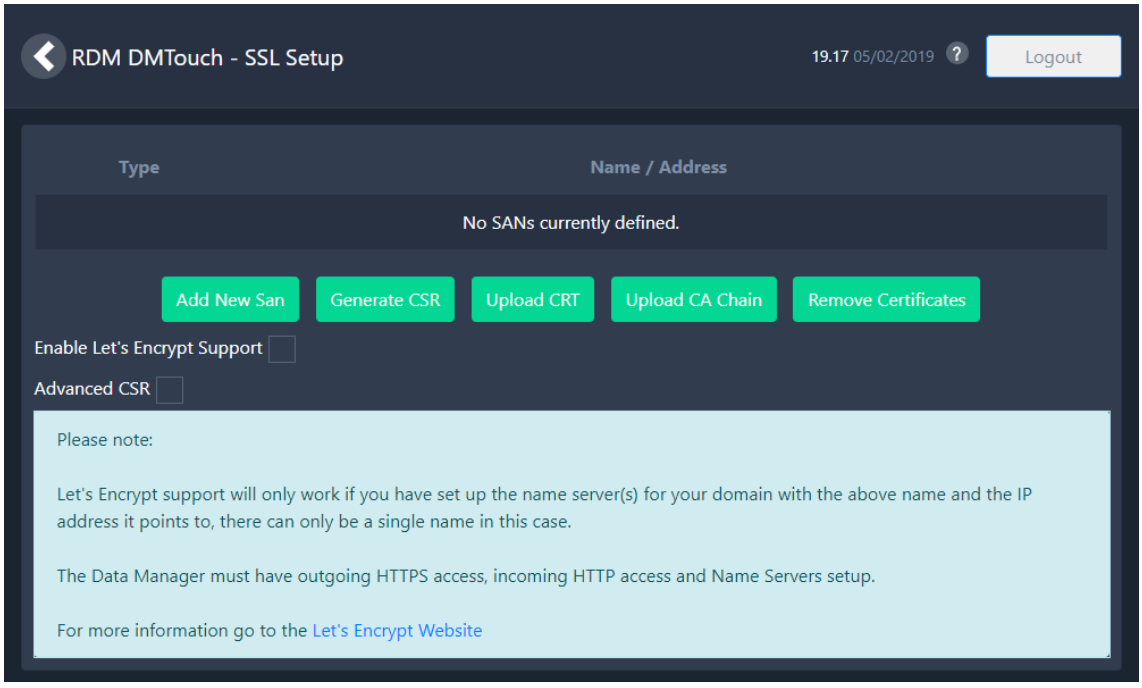
SSL Setup

From the Service Menu select: System/ Miscellaneous/ SSL Setup

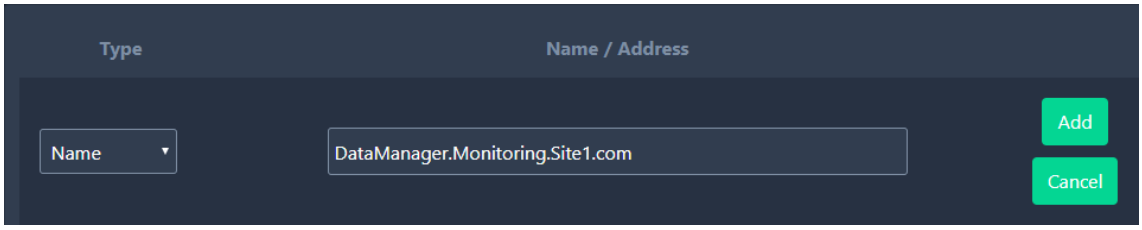
The DMTouch offers the facility to allow SSL (Secure Sockets Layer) encrypted connections, offering a more secure link to the DM's IP/URL. As with any SSL server/ client technology there is a strict process to set it up.

Note: To configure this feature requires specialist knowledge, please consult with an IT professional or your support team for further assistance if you are unsure.

The SSL setup page allows the user to do this. Entering the feature will show the below page.

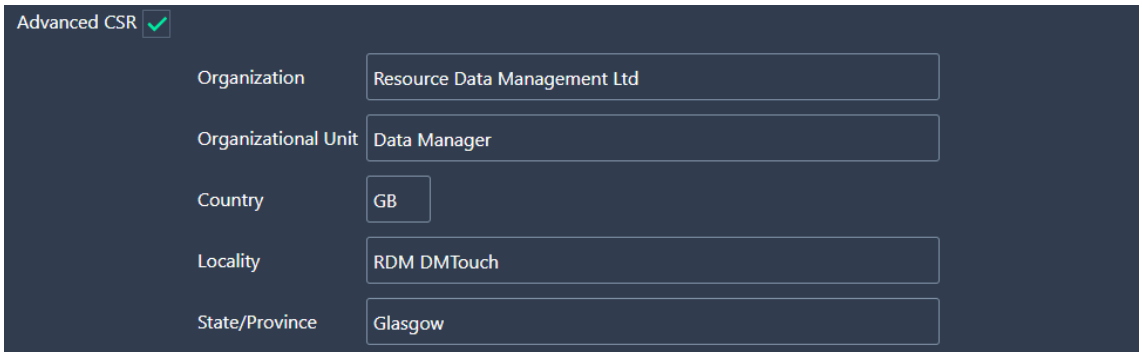


To begin, click in 'Add New San' (Subject Alternative Name). This will allow the user to enter the DMTouch's IP address or hostname used to access it.

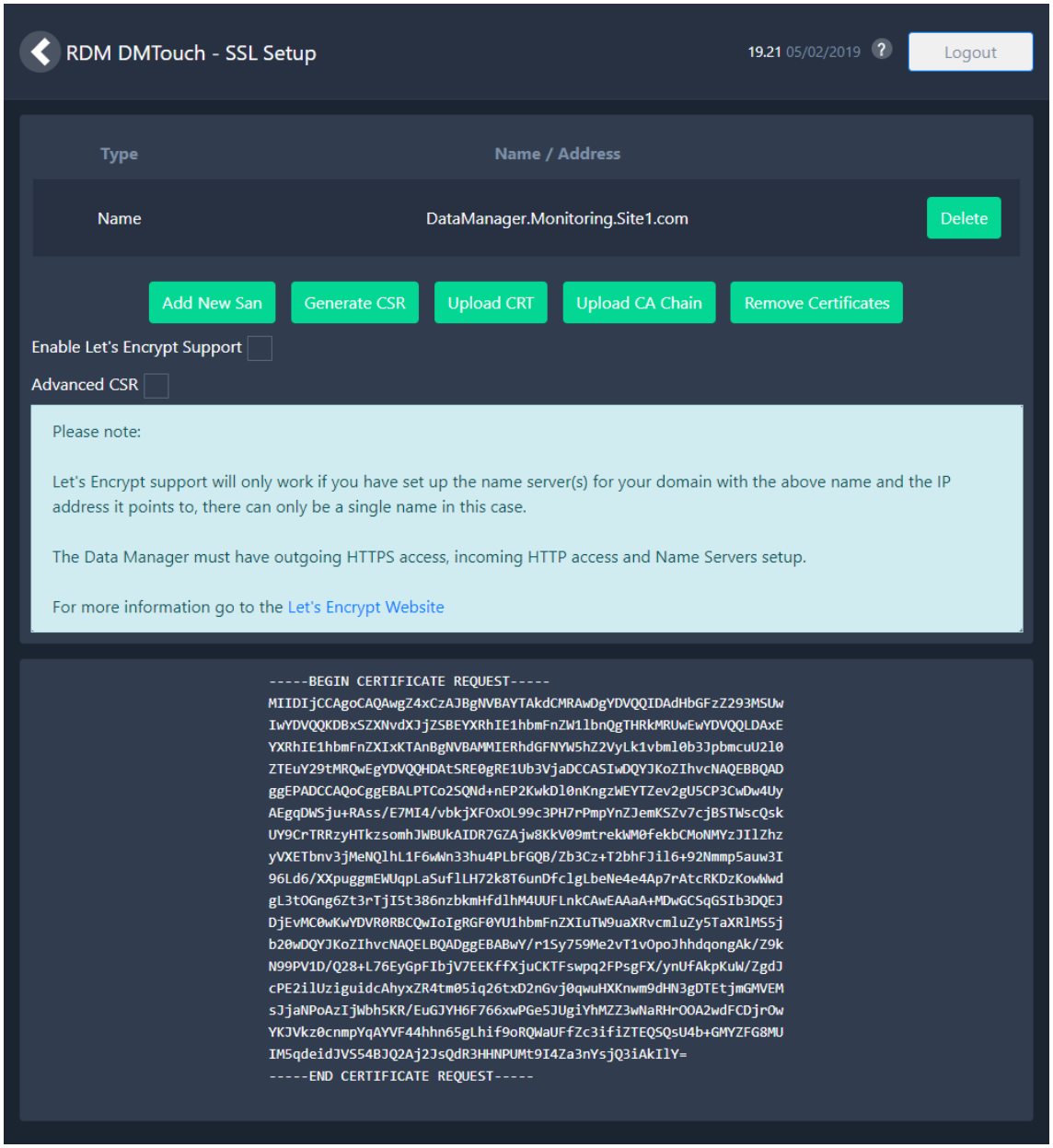


Click on 'Add'. This will add the URL/IP address to the table.

If specific details concerning organisation or the locale of the DMTouch is required, checking the 'Advanced CSR' option will expand the fields where they can be entered. An example is below



When the URL and locale details are entered and listed, click on 'Generate CSR' (Certificate Signing Request). It will produce something similar to the below.



The lines of text generated is what's required to be sent to the Certificate Authority (CA), therefore copy and paste the code into a text file and send it direct to them.
The CA will send back a 'CRT' file containing the public and private key pair used for encryption. When received, click on 'Upload CRT', select the file and upload.

The signing CA should publically make available on their website a trust chain file, use the 'Upload CA Chain' to upload the file.

Once completed the DMTouch will be accessible using the SSL encryption.

Note: The DM will still be accessible using the https://<IP address> without a certificate, however unless the user installs a properly signed certificate as outlined above, most browsers will display warnings and security precautions.

Let's Encrypt

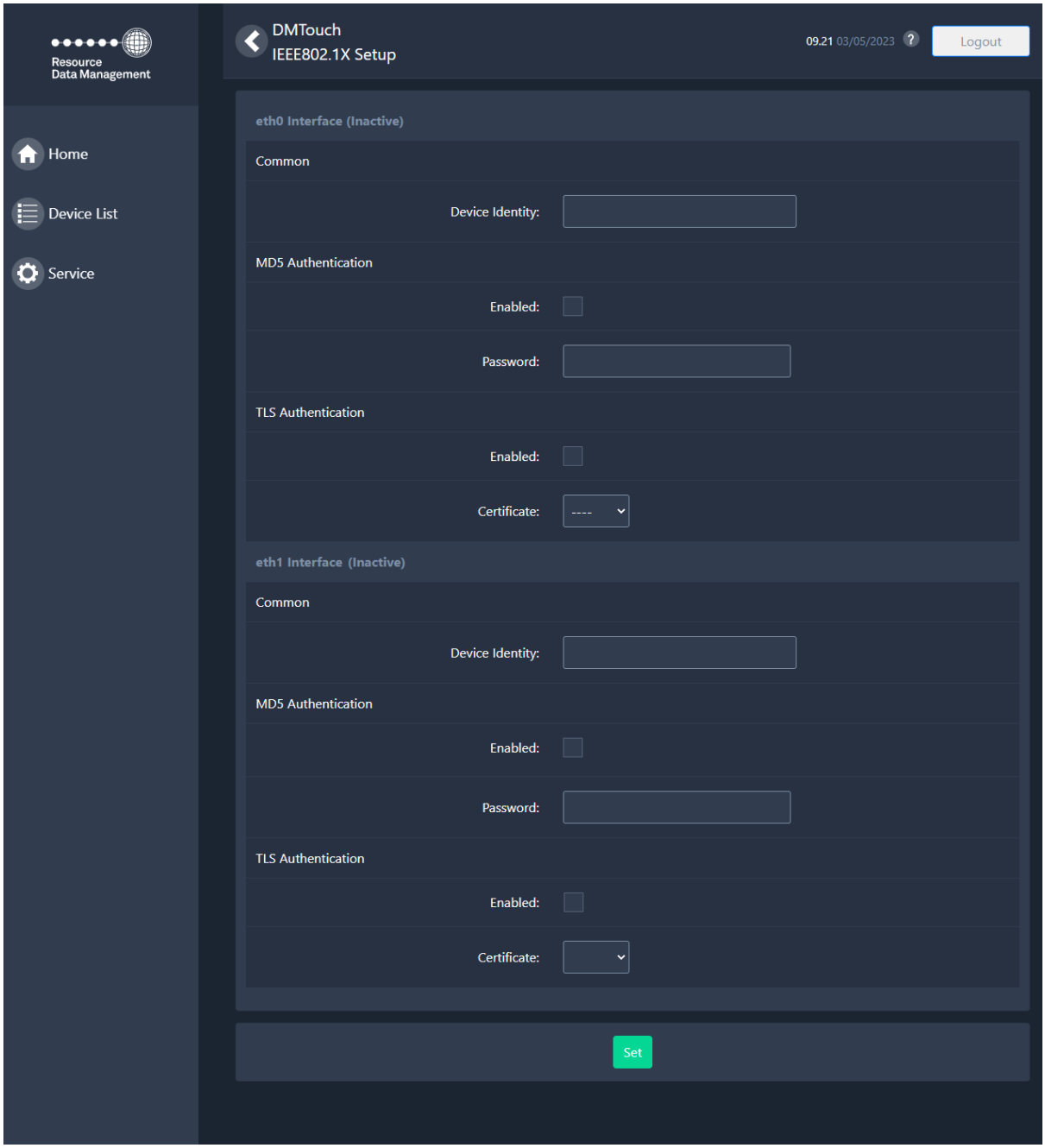
The DMTouch also supports Let's Encrypt. For setup, please consult the Let's Encrypt website.

Note: From DMTouch V3.1.0 and above it will only support ACME V2 of protocol.

IEEE802.1X Setup

The setup page lets you add IEEE802.1X port authentication for communication over Eth0 and/or Eth1.

The page allows the setup of either MD5 (message-digest algorithm) or TLS authentication.

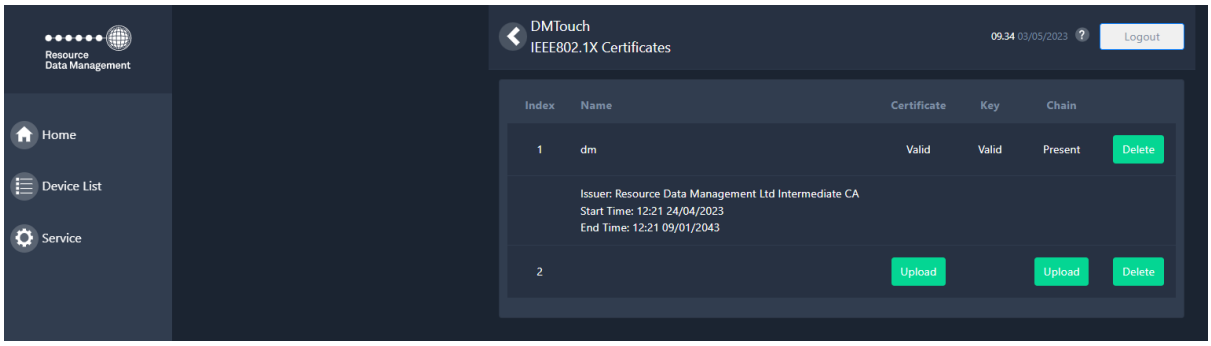


Device Identity: This is used to identify the device to the system that is doing the authentication (may need to be the same as the certificate depending on setup)

MD5 Authentication: Enable if needed and enter the password given by the authentication system.

TLS Authentication: Enable if needed and select one of the certificates in the drop-down list that have been uploaded in the IEEE802.1X Certificates page.

IEEE802.1X Certificates

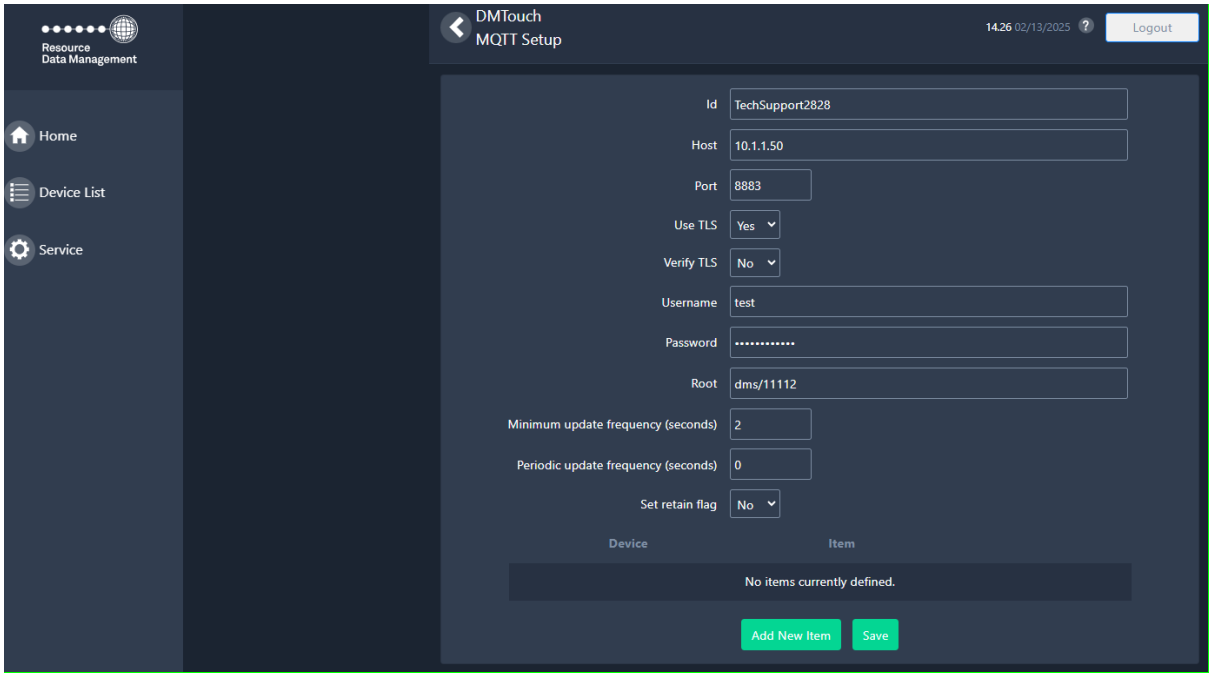


This page allows the user to upload the clients certificate and key and also the chain certificate that is used for checking the server certificate. The page will display if they are valid and some information from the certificates.

MQTT Setup

From the Service Menu select: System/ Miscellaneous/ MQTT Setup

Once enabled, the DMTouch can be configured as a client to communicate with an MQTT server to publish specific Devices and corresponding Items. The DMTouch can publish a maximum of 250 items in its library. The setup page will look similar below;



ID Enter a unique identifier of the DMTouch

Host Enter the IP address or URL of the MQTT server. If using a URL a name server must be setup within the Network Card Setup page.

Port Enter the specific port used in the MQTT server, default is 8883

Use TLS Select whether the server uses TLS or not.

Verify TLS Select whether the DM is to perform a check to confirm the certificate of the server is valid.

Username Enter the username credentials to authorise the DMTouch to use the server

Password Enter the password credentials to authorise the DMTouch to use the server

Root Enter the root directory of where the data is to be sent in the server.

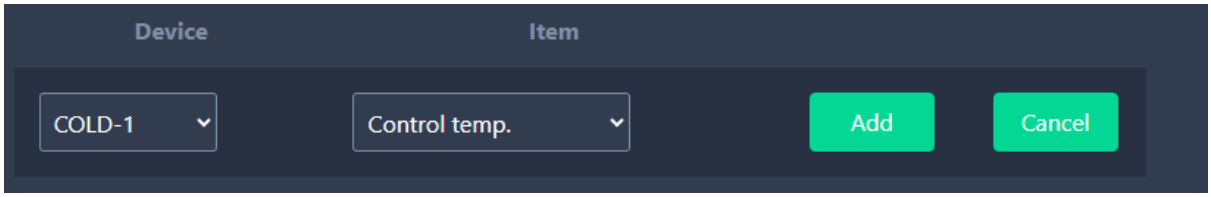
Min Update Freq By default the panel will push out values on COV (change of Value), if this value is set, it will only publish the information at the specified update frequency.

Periodic Update Freq This setting will allow the DMTouch to publish the items even if there has been no change of value. So if it is set to 20 seconds, if the value hasn't changed after that time, it will publish the information.

Set retain flag This sets the retain flag in the MQTT message.

Note: - The characters `**<> & '"**` `are not permitted in the fields Id, Username, Password and Root.

Following the configuration of the server, the MQTT library (held in DMTouch) can be created. To add a device and item, click on 'Add New Item'. Choose from the drop-down menu the device and item to be added.

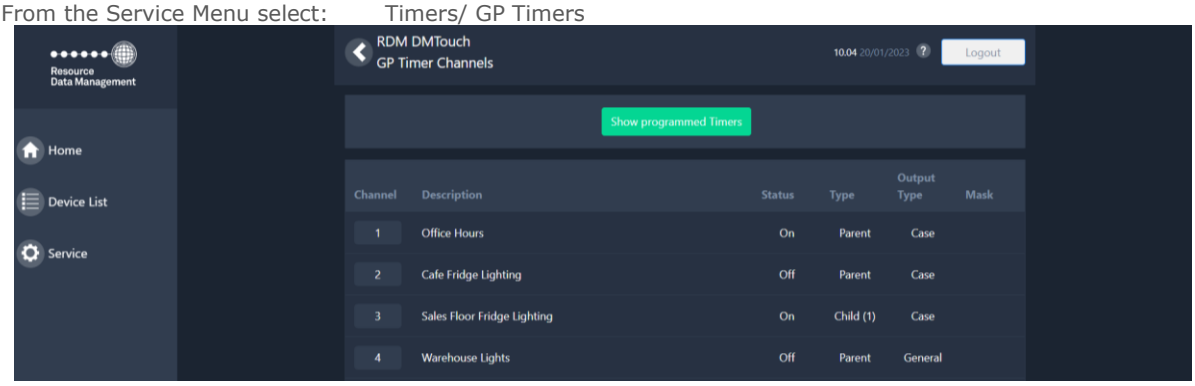


Up to 250 items can be published within the MQTT library held in the DMTouch. Once all settings have been configured and following any additional items, click 'Save' to confirm.

Timers

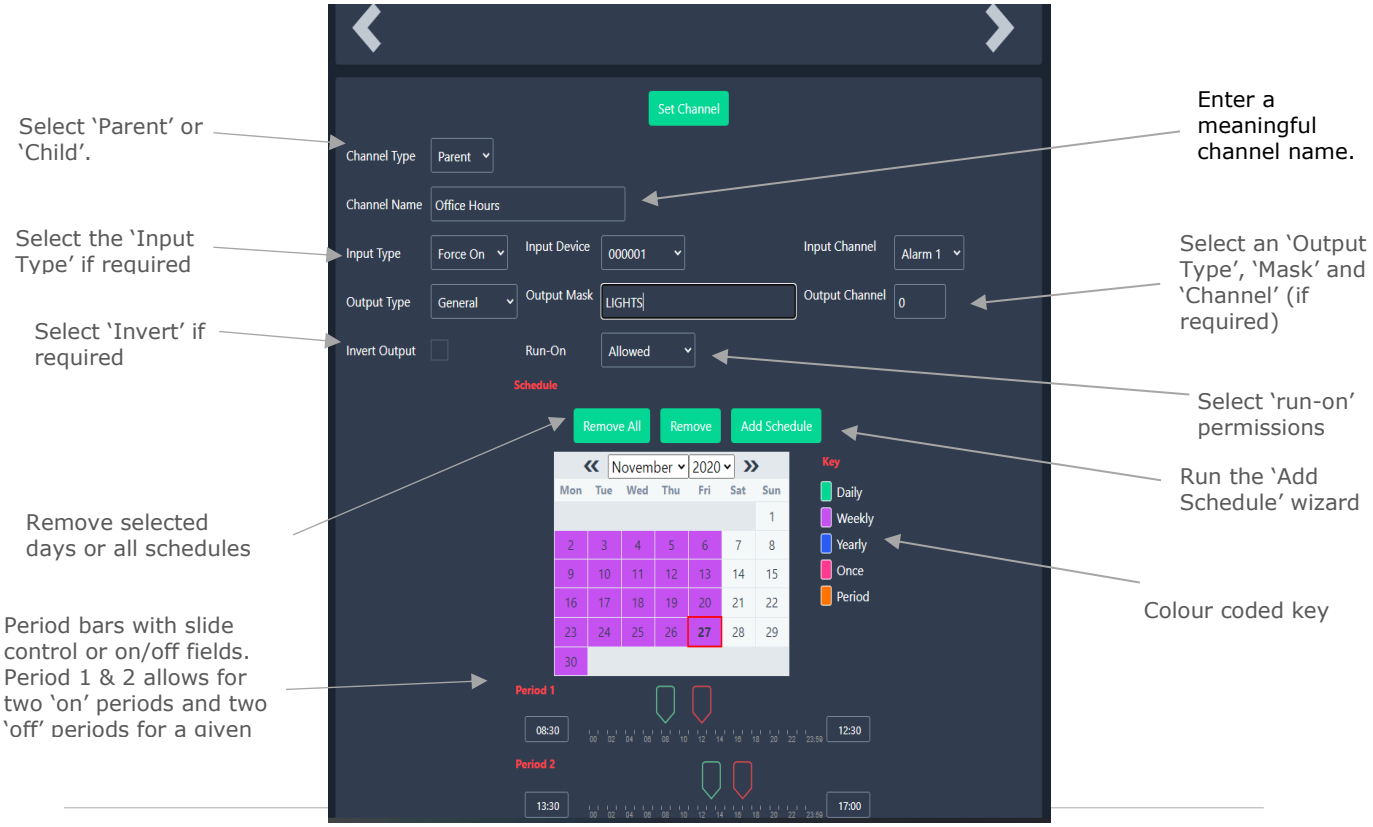
GP Timers

From the Service Menu select: Timers/ GP Timers



This page will display a list of the 100 channels that can be configured. At the top of the page there is a button called 'Show Programmed Timers'. Pressing this will change the screen so that it will only show anything that has been setup. In this state the button will display 'Show All Timers' which will then show all timers again.

Click on the channel you wish to configure, a set up screen similar to the one below will be shown;



Channel Type

Channel type can be selected as either 'Parent' or 'Child';

Parent: If selected as a Parent, the timer operates on the selected output(s) and schedule.
Child: If selected as 'Child', the timer will track the associated Parent with the selected offset periods.

Channel Name

The field allows for the timer channel to have a meaningful name.

Input Type

Input types are selected from the drop-down menu; choices are;

Unused: Select when no input type is required.
Force-on: Select when a network device is used as an override on.
Force-off: Select when a network device is used as an override off.
And: Select when a network device is used 'and' the schedule.
Toggle: Select when a network device is used to toggle the output(s).

Select the source device and the input from that device using the drop-down list once any of the above has been selected.

Output Type

Output types are selected from the drop-down menu; choices are;

Case: Timer activates the lights relay.
General: Timer activates the selected network device relay. Output Channel is the relay output the GP Timer channel will operate on. **Note**: 0 equates to Relay 1 on a device, 1 equates to relay 2 etc. The relay selected for operation must be a remote relay. Please check appropriate device user document for confirmation.
Local Relay: Activates the selected relay on the DMTouch. **Note**: Local relays are required to be setup as 'GP Timer' relays in the DMTouch.
Transmit: Allows the DMTouch GP timer channel to control the output of a GP Timer 2 block found in a Mercury TDB Plant Controller. The GP Timer 2 output will follow the current status of the DMTouch GP timer channel configured. Enter the mask of the desired Plant TDB controller and configure the controller appropriately.

Output Mask

The output mask field is used to steer the timer output to network device(s). Alphanumerical characters are inserted to control specific devices that follow the same 'mask'. In addition, the control characters '?' and ',' can be used. See examples below.

Example 1:
The timer would operate the lights relay on RC10-1 if the output type was '**Case**' and the mask set to '**RC10-1**'

Example 2:
The timer would operate the lights relay on all network devices of the format ****-*, if the output type was '**Case**' and the mask set to '**????-?**'. The '?' acts as a wildcard. The wildcard should be used with caution so that only the appropriate devices receive a network command from a GP timer.

Example 3:
The timer would operate the lights relay on specific devices if the type was '**Case**' and the mask set to '**RC01-1, RC01-2, RC01-4, RC01-6**'. This would also work with wildcards (e.g RC????, BY????, DELI??)

Note: 'Case' command should only be used to operate case controllers that have lights relay. It is unadvisable to hit other controllers with this command e.g., a Pack controller.

Output Channel

This is the channel to be switched on the remote device. The number will vary for different controllers. When the controller is logged on the panel, count how many down the desired output is in the list, starting at 0. For example, below, if the user wants to send the signal to the remote relay it would be output number 2.

Name	Value	Units	Watch
Valve Opening	0.0	%	☐
Liq. Line Valve	Closed		☐
Remote Rly4	Off		☐

Add Schedule Wizard

Run the 'Add Schedule Wizard' to quickly setup up the channel times. There is a selection of;

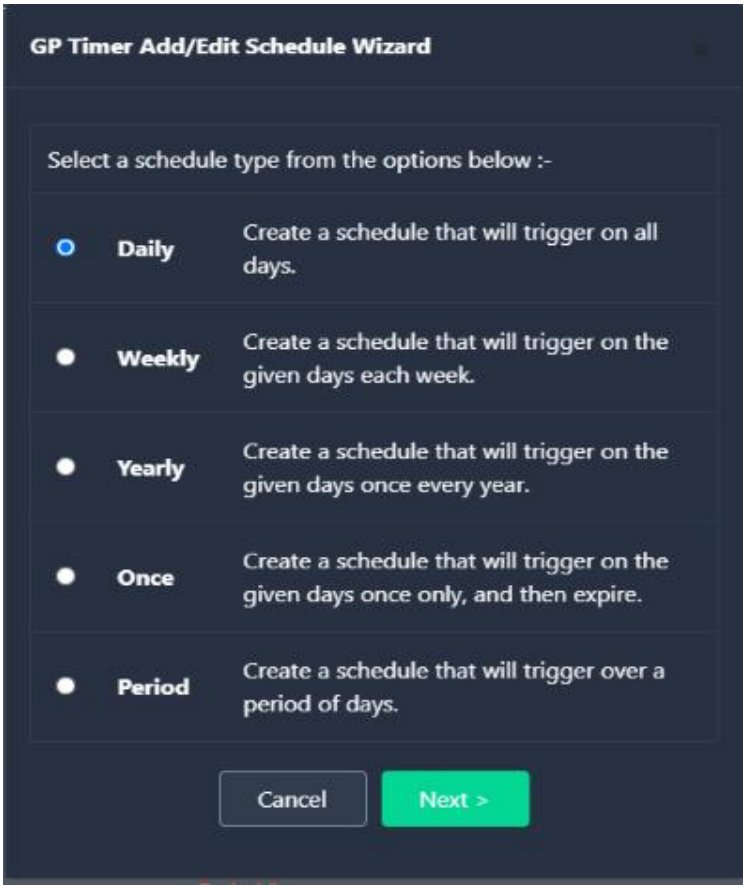
Daily Every day has the same times.

Weekly Separate days of the week can be selected and setup.

Yearly Used for annual events, such as Christmas Day.

Once Used for a once only event.

Period User can specify a schedule to trigger over a period of days



Depending on which schedule type is chosen on the screen shown to the right, the wizard will then either prompt dates and then times to be chosen or to check the tick-box of the days of the week followed by the times to be set.

Once these are selected, click 'Finish' to add the schedule.

When the channel has been setup, set-up modes are indicated on the calendar colour coded to show the respective events. Two GP timer channels should not be configured to operate the same output on a single controller.

Note: Any changes in the wizard, to the period or after using remove and remove all, will save the changes automatically to the channel.

Invert Output

Check this box to invert the associated relay output operation.

Run-On

Select an option from the drop-down menu; choices are;

Allowed: Run-on feature allowed to operate on this GP Timer channel.
Not Allowed: Run-on feature not allowed to operate on this GP Timer channel and GP Timer channel will therefore not appear in the Run-On screen.

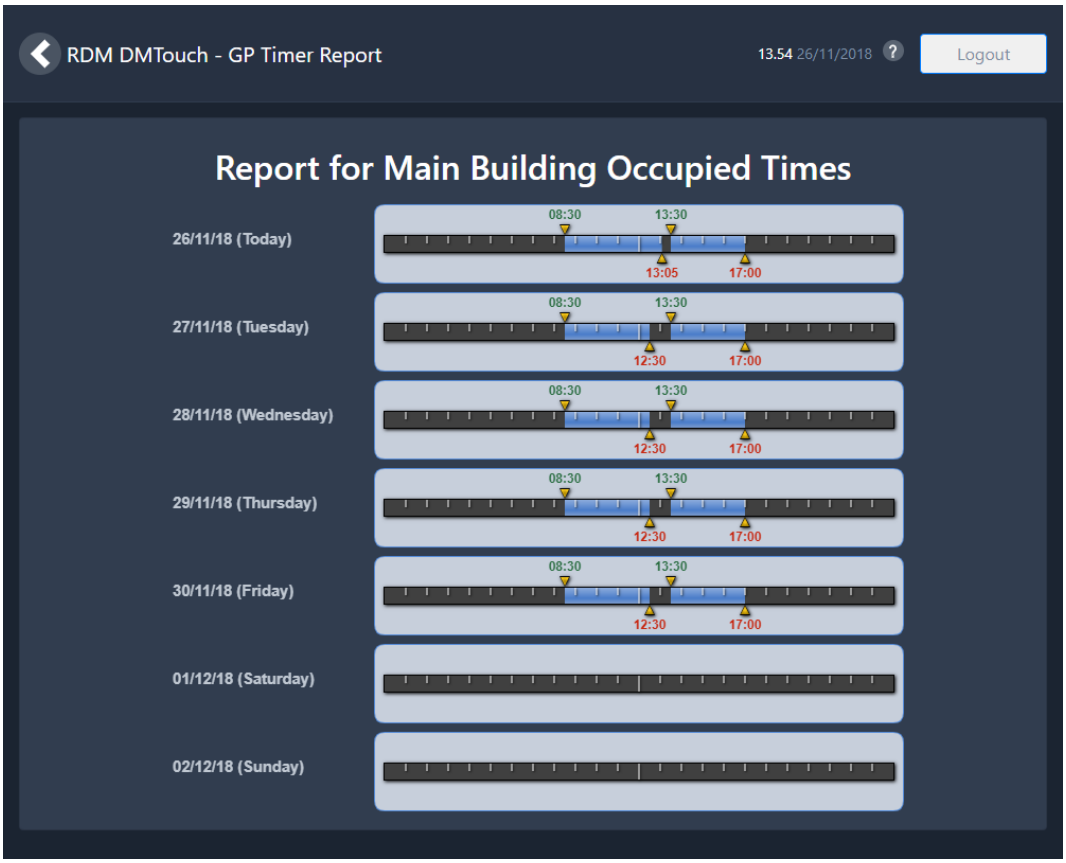
Global GP Timer Channels

In addition to the 92 GP timer channels there are 8 global GP timer channels, these are numbered 33 to 40. These global GP channels are pre-configured as Parent channels and are appended with 'Global GP Channel 1' and cannot be changed.

GP Timers Report

From the Service Menu select: Timers/ GP Timer Report

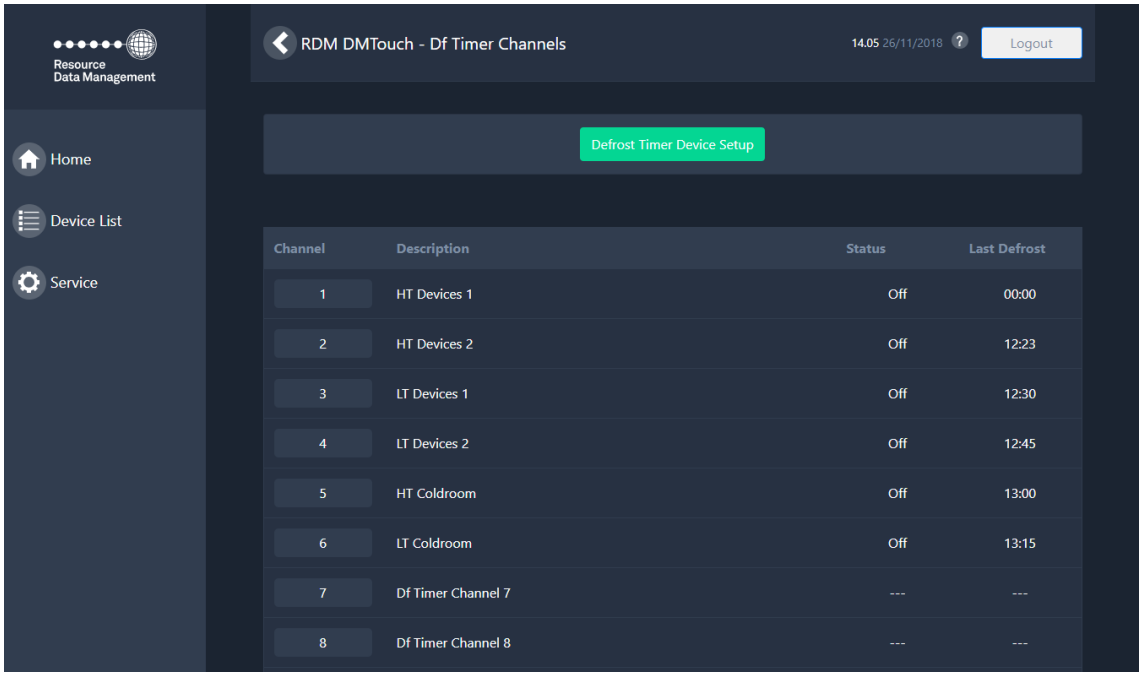
This feature provides a quick view of the on and off times of the selected channel. From the main page, it lists all available channels. Selecting a channel will show an overview of the current channel setup.



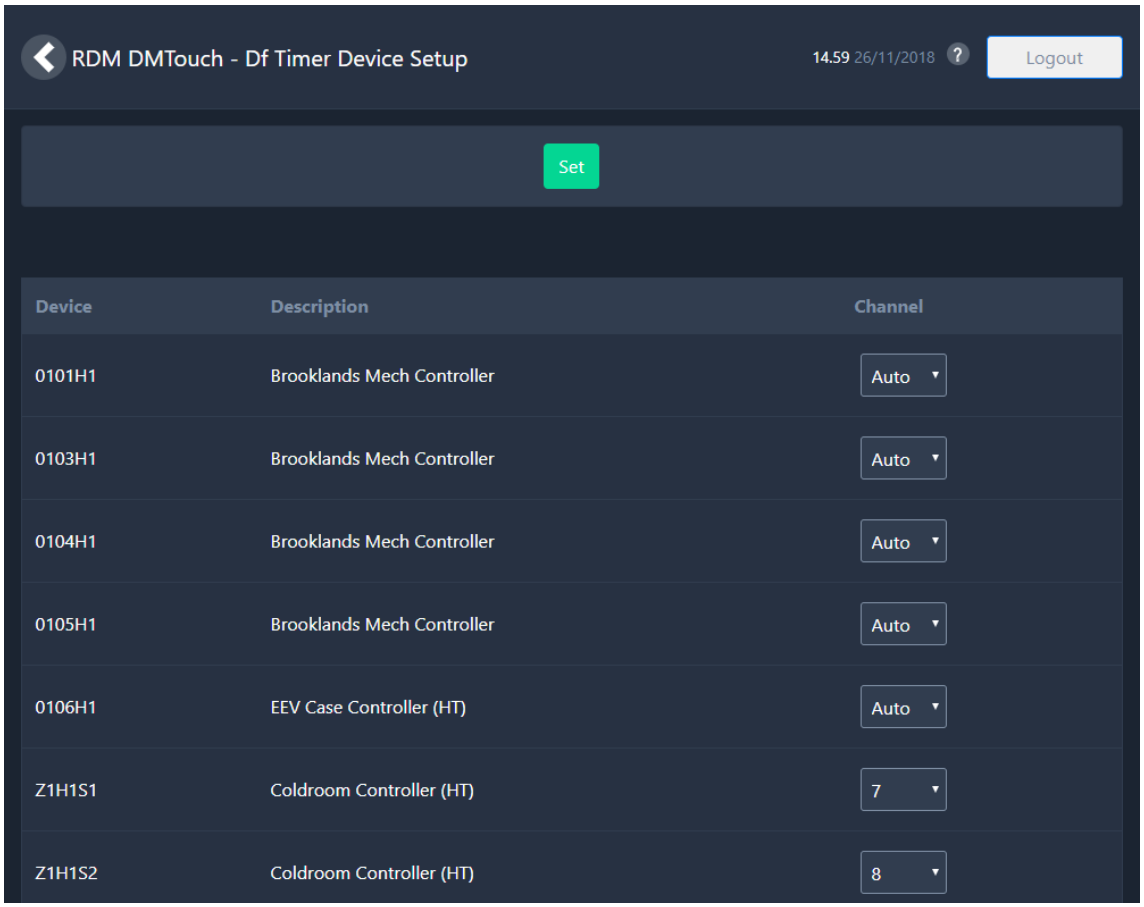
Defrost Timers

From the Service Menu select: Timers/ Defrost Timers

There are 100 channels for defrost scheduling available on the DMTouch and 32 channels on the miniDM. Upon entering the menu, it will list all defrost timer channels available, show their current state and the last defrost time. It will look similar to the below.



Clicking on 'Defrost Timer Device Setup' results in a similar screen as the one below.



As default, all devices listed will have their designated defrost 'channel' set as 'Auto'. With this setup, they will automatically be assigned a defrost channel based on the middle 2 characters (3rd& 4th character) of their device name. So, for example, defrost timer channel 22 will operate on all devices that have 22 as their middle characters, such as RC**22**-1, RC**22**-2 & RC**22**-3.

To assign devices to specific defrost timer channels, use the drop-down menu (next to the device) and select a channel number between 1 and 100 for each device.

When a device has been 'mapped' to a defrost timer channel number between 1 and 100, the defrost timer channel will operate that device.

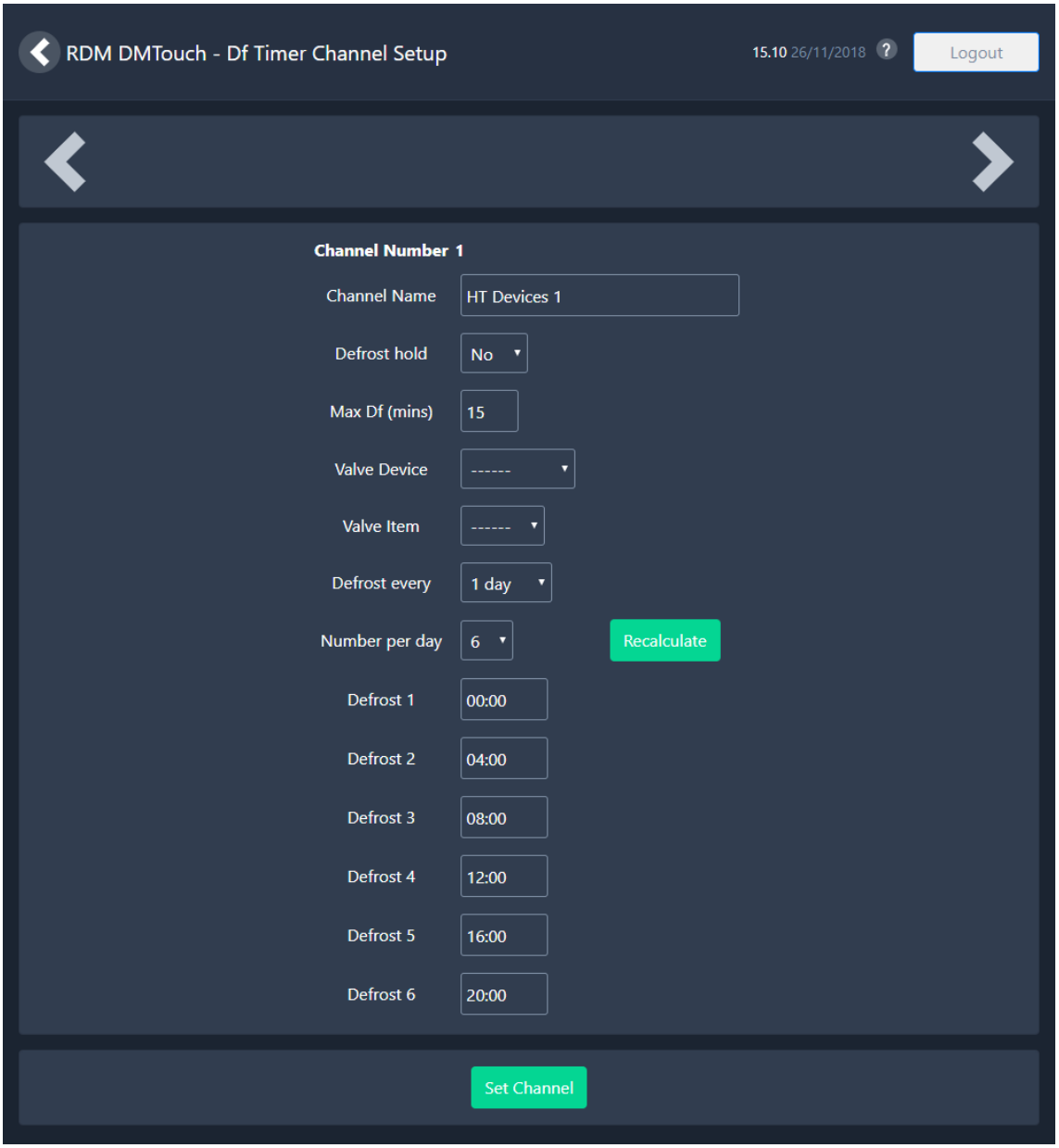
In the example shown above, devices; 0101H1, 0103H1, 0104H1, 0105H1, 0201H2 will use defrost channels; 1, 3, 4, 5 and 1 respectively. Devices Z1H1S1 and Z1H1S2 have been assigned channels 7 and 8 respectively.

To confirm any changes, click 'Set'.

Then clicking the back button will go back to the previous page showing the defrost channel list.

Defrost Timer Channel Setup

To configure a defrost schedule, click on a channel number. The following defrost setup page will be displayed.



Firstly, enter a meaningful name in the 'Channel Name' field such as 'Defrost Timer for bay 10'.

Defrost Hold

The Defrost Hold feature prevents any single controller from entering the recovery process until all the controllers operating from that defrost timer channel have completed their defrost.

Once a controller has reached its defrosted termination temperature it enters a defrost hold state. When the last controller reaches its termination temperature the DMTouch sends a network command to the controllers to exit defrost hold and continue with the defrost process.

If the defrost hold release command is not received by the controllers, e.g., a controller doesn't reach its defrosted termination temperature, then the cases will exit defrost hold when the controller's defrost max time expires.

This feature requires the defrost hold parameter in the case controller to be enabled. See Mercury controller user guide on the RDM website for further details.

Defrost Header Station Control

Max Df (mins) Maximum period the valve is opened for (Minutes). If all controllers operating from this defrost timer channel complete their defrost before this value is reached then the selected relay will be turned off. **Note:** This is also the maximum defrost length used in Defrost Hold. If the DMTouch doesn't receive confirmation from all controllers operating on the defrost timer channel that they have successfully completed their defrost then the DMTouch will send a defrost termination network command to those controllers when this value is reached.

Valve Device From the drop-down menu select the appropriate defrost header controller.

Valve Item Enter the number of the relay to operate on. E.g., 1 would operate relay 1, 2 would operate relay 2 etc.

Note: Do not select a refrigeration case controller when configuring the Valve Device and Valve Item.

Defrost Every

From the drop-down menu, select how often a defrost should occur. For example, if set to 3, 'n' number of defrosts will occur every 3 days. Where 'n' is dependent on the number per day selected.

Number per Day

From the drop-down menu select the number of defrosts the channel should send out per day. When a number is chosen it will automatically display additional fields.

Once a number has been selected, that number of new fields will be displayed. E.g., if '3' is selected, 'Defrost 1', 'Defrost 2' and 'Defrost 3' will be displayed.

If the interval between defrosts should be equal, insert the start time of the first defrost into 'Defrost 1' and click 'Recalculate. The times will automatically populate in the other fields.

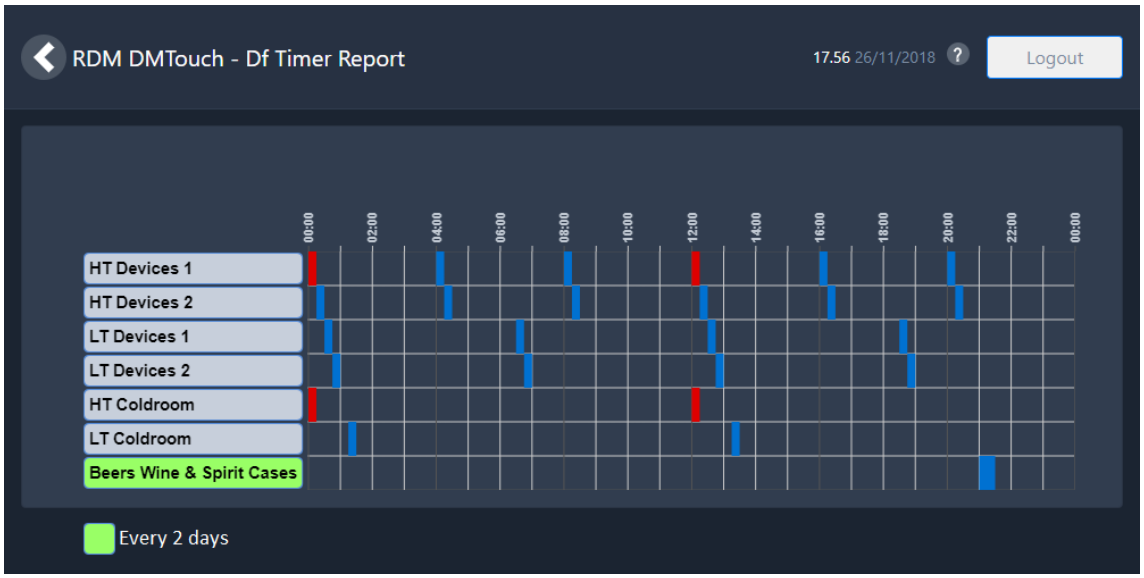
Alternatively, the user can manually enter specific times in the fields.

To complete the defrost schedule setup, press 'Set Channel'.

Defrost Report

From the Service Menu select: Timers/ Defrost Report

The Defrost Report allows the user to view all the defrost timer channels which have been configured and their scheduled defrost start times. Click on the timer section of the row to view the defrost channel.



The blue block for each channel indicates the start time of a defrost for a particular channel. A red block indicates that two or more defrosts will occur at the same time on different defrost timer channels. If a defrost has been set to occur every 'n' day, where 'n' is a number between 1-7, and a colour coded key is displayed at the bottom of the page. This indicates what defrost channels have been configured to perform defrosts every 'n' day.

Note: If a channel is set to perform a defrost every day, then the channel name will not be highlighted with a colour.

Defrost Sources

For use with Altierre equipment only, included for future development.

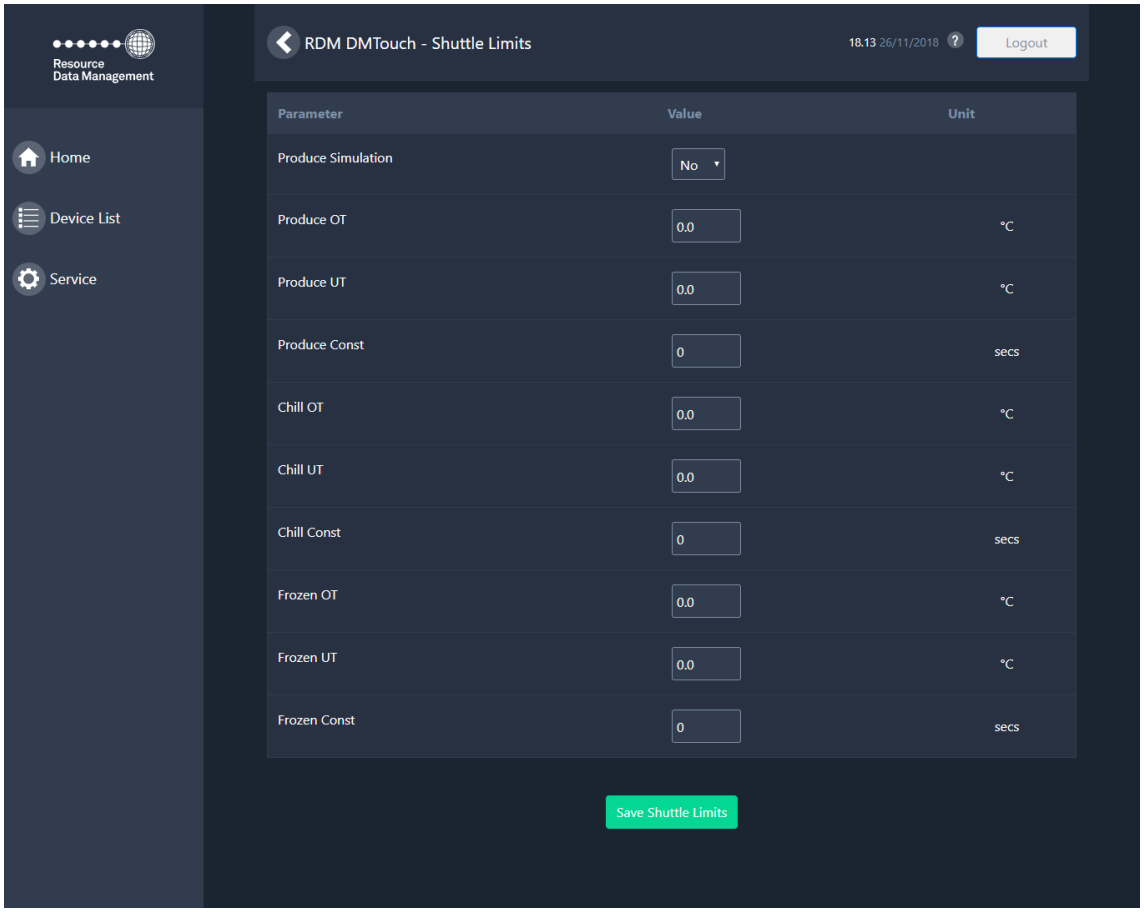
Shuttle – USB Temperature Logger

The RDM USB Shuttle temperature logger can be used in a range of applications and allows for remote temperature recording. Please see the USB Shuttle temperature logger user document for further details and the steps required to programme the device for operation.

Shuttle Limits

From the Service Menu select: Shuttle/ Shuttle Limits

This results in the page below.



Here the user can enter the temperature limits for a number of temperature monitoring applications. When the user inserts the Shuttle into one of the DMTouch's USB ports the DMTouch will ask the user to select between Produce, Chill or Frozen from its display menu. The corresponding alarm limits will then be applied to the data stored within the Shuttle. If any of the data points are out with these limits an alarm will be created to warn the user.

The Produce Simulation option allows the DMTouch to electronically slug the response of the Shuttle temperature data points recorded, by adding a damping value, to simulate the actual product temperature during the logging time period.

Saved Data

From the Service Menu select: Shuttle/ Saved Data

Saved data allows you to graph data which has been saved from a Shuttle to the DMTouch.

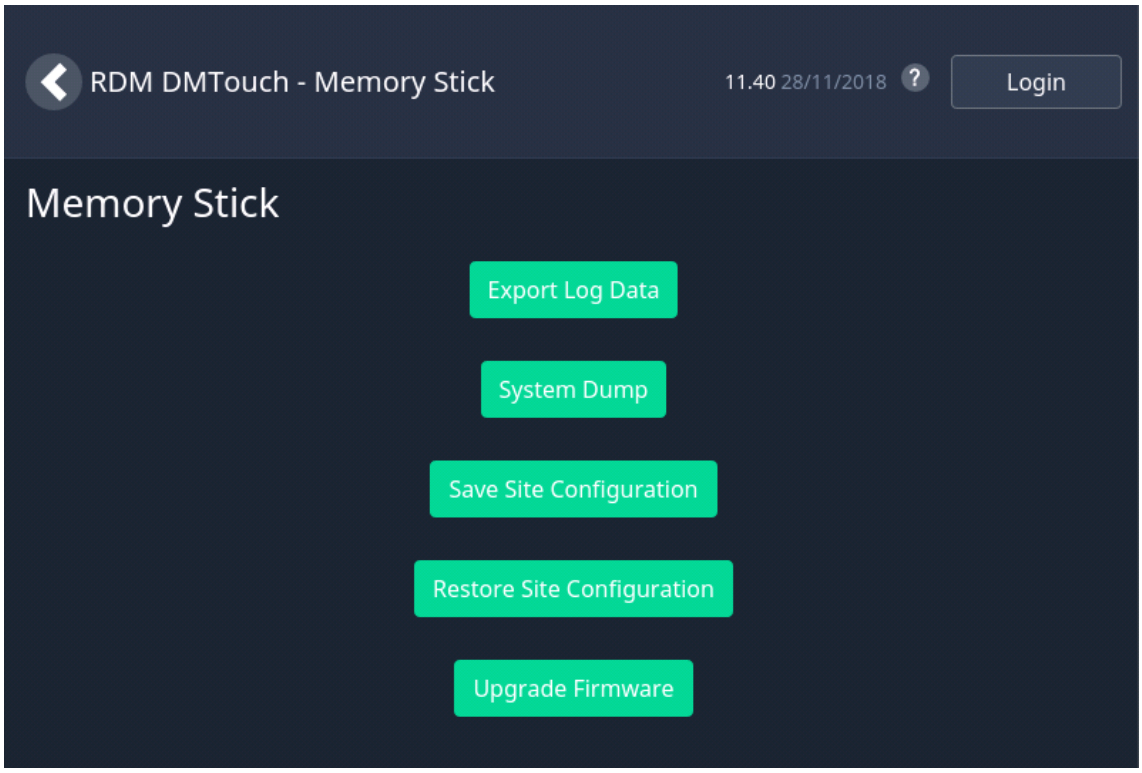
Log

From the Service Menu select: Shuttle/ Log

Shows log data pertaining to changes made to the options available under the Shuttle icon.

DMTouch Interaction with memory a stick

On placing a memory stick into one of the DMTouch USB ports it will result in the Memory Stick screens being shown. An example is below.



When selecting one of the listed options the user should follow the on-screen instructions.

Export Log Data:	Press this option to download logged data from the DMTouch to the memory stick, the options and process will be similar to the steps in the Export Log Data section.
System Dump:	Press this option to save the system information of the DMTouch to the memory stick.
Save Site Configuration:	Use this option to save the DMTouch's full site configuration to a file on the memory stick. See Appendix 2 for more details.
Restore Site Configuration:	Use this option to restore the DMTouch's full site configuration from a file previously saved on the memory stick. See Appendix 2 for more details.
Upgrade Firmware:	Allows the user to upgrade the DMTouch software. **Note**: an upgrade file and activation code is required from RDM to enable the upgrade.

Once the selected operation is complete, unplug the memory stick.

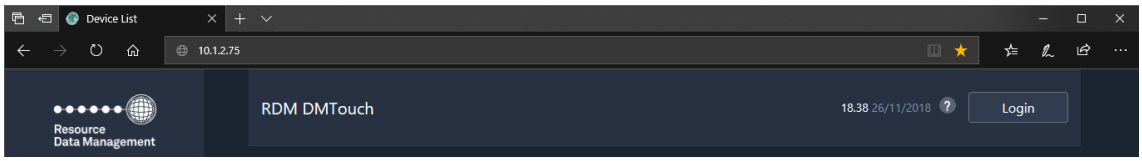
Note: To access these functions on the miniDM, the user needs to connect with a PC/Laptop through the Ethernet or USB port.

Appendix 1: Connecting a PC to the DMTouch

Ethernet Connection

The PC or laptop must have a functional Ethernet network adapter. Using an Ethernet patch lead (CAT5/CAT6), connect the Ethernet adapter on the PC/ laptop to a spare port on the DMTouch. Alternatively connect via a 3rd party IP switch or an RDM Mercury hub (Ethernet ports) connected on the network. As default the DMTouch's DHCP server will be running and will issue IP addresses in the range 10.1.2.x. Where x will be a number between 80 and 254.

Start an Internet Browser session and in the address field, type in http://10.1.2.75 and press return or click the go button. It will show the DMTouch Home page.



Possible Problems

If the home page does not display, it may be because the Internet Explorer and/or the PC is not configured correctly for this operation. Some fundamental checks would be as follows;

DMTouch
Ensure DHCP is on.
Confirm the IP address 10.1.2.75 is configured within eth0 (or the correct IP address of site).
Check for any alarms stating another DHCP server was detected.

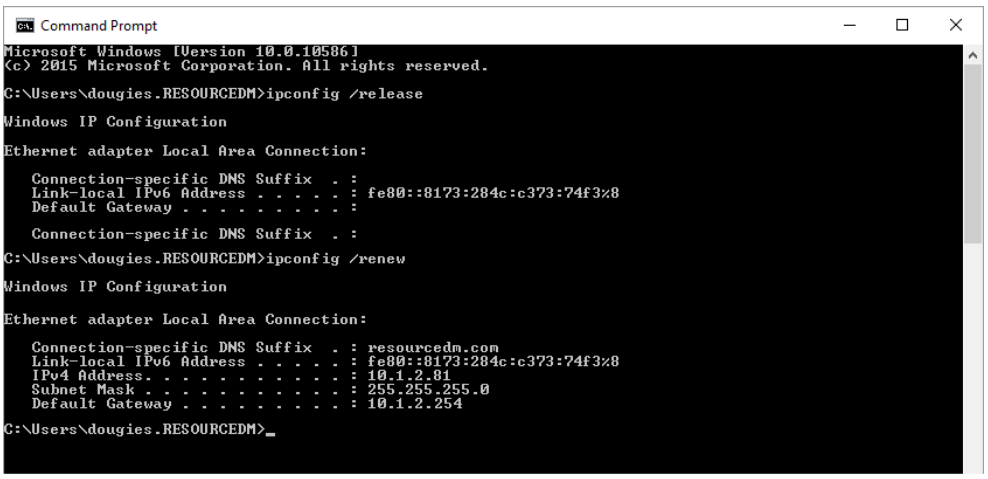
PC/ Laptop
Ensure the PC is configured to pick up an IP address automatically with Network settings.
Ensure the PC is not connected to any other networks, VPNs or has any proxy settings setup.

If the Home page is still not displayed, it may be because the PC/laptop has previously been connected to an Ethernet network and its settings are still present. To change the settings for connection to the DMTouch, perform the following commands on the PC.

Open a command prompt (may need to be run as admin). At the command prompt, type in the following command;

ipconfig	this will show the current states of all network connections. Look for 'Ethernet Adapter Local Area Connection' and the Ipv4 address. It should be in the range 10.1.2.x. If it is not using the following command;
ipconfig /release	This will end the lease of the current IP address. Wait for the command to complete, and then type in the following command;
ipconfig /renew	This will request a new IP address.

Below is an example of the above commands:



If for any reason the above does not work, please consult RDM Technical support.

Appendix 2: Save/Restore DMTouch Configuration

Important

NEVER attempt to install a configuration file from a newer Data Manager Software version into a Data Manager with an older software version as this could result in complete system failure.

RDM will not be liable for anything that occurs as a result of this action having been carried out.

For further information or for questions regarding this matter please feel free to contact RDM Technical Support.

Process via USB

The DMTouch has the ability to save or restore a DMTouch site configuration. This feature allows the end user to copy a system configuration from one DMTouch to another. This should help reduce the commissioning time should a DMTouch need to be replaced onsite. Please note that this feature can also be used with the Data Manager, allowing you to copy and restore site configurations from and to older panels.

Caution should be taken when using this feature. Do not proceed if you are unsure of its consequences.

To save the DMTouch site configuration, with a USB memory stick, use the following procedure;

1. Ensure all alarms are accepted before proceeding.
2. Insert a memory stick into a USB port on the DMTouch. The DMTouch will detect the memory stick and list a series of options.
3. Select "Save Site Configuration" from the list. The user will then be prompted to enter a service level or higher user name and password.
4. Choose from the two locations listed; 'Force Internal Save' or 'Save to file'. The latter will allow the configuration to be saved on the USB stick. Press 'Save to file'. The result will show the message 'Download Complete', confirming the save. The DMTouch will then return to the list of options.
5. The site configuration will now be saved on the memory stick. The file name given to the saved configuration will be the DMTouch 'Site ID'. This configuration can now be copied to another DMTouch.

To restore a DMTouch configuration, with a USB memory stick, use the following steps;

1. Ensure all alarms are accepted before proceeding.
2. Insert the memory stick that has the desired DMTouch configuration saved, into a USB port.
3. Select "Restore Site Configuration" from the list. The user will then be prompted to enter a service level or higher user name and password.
4. The screen shown will offer two options; 'Restore internal backup' or 'Select file to upload'. Selecting the 'Choose file' under the 'Select File to upload' will result in a screen listing the files held on the USB memory stick. Select the correct config file and press the green tick on the top right corner.
5. The screen shown will now indicate the previously selected file in the 'Upload field'. To complete the process press 'Upload'
6. The timer icon' will be shown while the site configuration is copied to the DMTouch. Once complete the DMTouch will re-start momentarily. The DMTouch will now be running the selected configuration.

Note: if you are copying a configuration on to a DMTouch which has already been configured, there is no way to revert to the previous site configuration once this process has been completed (unless the previous site configuration has been saved beforehand).

Process via PC

The same procedure can be completed from the DMTouch web pages;

To save and restore a site configuration from a PC, use the following steps;

1. Firstly, login to the old DMTouch by clicking on 'Service' and navigate to 'System', 'Site' and click 'Save site setup'.

2. The two options will be shown; 'Force Internal Save' and 'Save to file'. Selecting the 'internal save' will save the configuration on the DMTouch's internal memory; the other will allow you to save the file to your pc/laptop. Select 'Save to File'.

3. Once the above is complete, connect to the new DMTouch to upload the site configuration. This time navigate to 'Service', 'System', 'Site' and click on 'Restore Site setup'.

4. The options will be to restore from the 'internal backup' or choose it from a file on the pc/ laptop. To select a file, browse to it using the window provided. The file will then show in the field on the screen, from here click on 'Upload'.

5. The DMTouch will restart once complete.

Note: if replacing one DMTouch onsite for another DMTouch firstly copy the old DMTouch configuration. Isolate the old DMTouch from its power supply and remove the unit. Now affix the new DMTouch in position. Before turning on the new DMTouch **DO NOT** connect any of the controller RS485/IP networks, if fitted, this should be done once the site configuration has been copied across to the DMTouch. If daughter boards are fitted to the old DMTouch make sure they are fitted to the new DMTouch before uploading the configuration. The 'new' DMTouch must have the same system configuration options enabled as the DMTouch that it is replacing e.g., if the 'old' DMTouch has all the energy features and 2 IP Networks enabled then the 'new' DMTouch must have this also.

The site configuration should contain the current DMTouch set up e.g., GP timer channels, defrost timer channels, alarm indexes, alarm actions, usernames/passwords etc. You must however review the DMTouch configuration once complete to ensure the desired set up has been achieved. Care should be taken when using a configuration that hasn't been saved recently as the DMTouch configuration may have been edited/changed since saving the setup e.g., the modification of a GP timer channel.

Appendix 3: Related Part Numbers

Note: Not All features or functionality are available by default, please find below the list of hardware parts/software feature activations which can be ordered when purchasing a DMTouch.

Feature Description	Part Number	Feature Description	Part Number
DMTouch Base model with on board PSU & SSD	PR0510	Carel 485 Interface	PR0470-CAR485
DMTouch Base model with on board PSU, SSD & Fibre network interface	PR0510F	RCS Interface Enabler	PR0470-RCS
Remote Alarm Beacon(Operated from DMTouch Relay)	PR0458-CLR	BACnet Interface Enabler – Max 32 devices	PR0471-BAC
DMTouch 4 Port hub I/O board upgrade kit	PR0459	DMTouch BACnet Server Enabler	PR0471-BACSI
12 Analogue probe input expansion card	PR0460	Refrigeration Performance Indicator (RPI) **(DMTouch Only)*****	PR0471-RPI
Relay digital output expansion card	PR0461	Energy Saving – Optimisation Features Only	PR0474
4 x 4 – 20mA Input expansion card	PR0462	Energy Saving – Network Trim heater control only	PR0475
4 x 4 – 20mA Output expansion card	PR0463	Energy Saving – Night Blinds Features only	PR0476
4 x 0 – 5 or 0 – 10 Volt Output expansion card	PR0464	Energy Saving – Condenser TD Features only	PR0477
4 x 0 – 5 or 0 – 10 Volt Input expansion cards	PR0465	Energy Saving – Performance Features only	PR0478
2 x 0-10 V Input & 2 x 0-10 V Output	PR0466	Energy Saving – Defrost Warning Features only	PR0479
6 Input (240V Status)	PR0467	On-board - RS485 Genus compatible network- x1 32 Devices (DMTouch Only)	PR0480
USB to RS485 Genus Network Adapter -2 x 32 devices	PR0482	IP Network Enabler – Each 32 devices	PR0481
USB analogue Modem	PR0491	Siemens NetRS/NetPX Interface Enabler	PR0483*
On-board battery backup (UPS)	PR0492	Energy Saving – All Features	PR0484
USB card reader kit with DMTouch wing cover	PR0493	Energy Monitoring Feature Enabler	PR0484-EMON
USB 4G Modem (DMTouch Only)	PR0496-4G	Pack Shutdown Support (Intelligent Load Shedding)	PR0484-PSS
Touch XL – Orbit Out Station	PR0617-OB-X-XX	The Data Builder	PR0485
USB to Fibre Network Interface Adapter **	PR0459-FIB	The Data Builder Lite	PR0485-LITE
USB to RS485 Tektroniks Network Adapter (2 x 32 Devices)	PR0470-TEK	ActiveFM	PR0487
Philips Envision Lighting Interface	PR0471-PHENV	CPT and Predictive Alarming Functions	PR0487-CPA
Secondary IP Ethernet Interface (USB Adapter)	PR0486	Lon Software Enabler	PR0488-ENA
XLON RS485 or FTT-10A Adapter	PR0488-485 or FTT	Carel® Webgate Enabler	PR0490-CWG
USB Card Reader	PR0493	MiniDM Default Parameters	PR0490-DMPARA
USB/485 Modbus Adapter for DMTouch	PR0623	Enhanced Web Services– DMTouch	PR0490-EWS
DIN Mount Bluetooth Wireless Mesh Ethernet Router	PR0632-DIN	Enhanced Web Services– miniDM	PR0490-MDWS
Wall Mountable Bluetooth Wireless Mesh Ethernet Router	PR0632-SF	MQTT Support	PR0490-MQTT
Wall Mountable Bluetooth Access Point – No PSU	PR0632-SF-NOPSU	Cbiss Gas Interface3	PR0498*
		Shuttle USB Logger Interface Enabler	PR0499
DMTouch Software Upgrade	DMSWUPG	Bluetooth Wireless Mesh Software Enabler-32 devices	PR0635
Plant Backup	PR0468-PB	Modbus Type Editor OEM activation	PR0655-DM – OEM-DEV
Modbus TCP/IP Interface Enabler	PR0470*	Modbus Type Editor (per type)	PR0655-DM-TYP
Altierre Interface	PR0470-ALT	miniDM TouchXL Orbit Support	PR0655-MD-OB

* IP Network Enabler required. Once the interface is enabled each device which logs on to the DMTouch takes up one position out of a block of 32 IP devices. Doesn't apply to Computer/Laptop or TouchXL connections.

**Only 1 x PR0459-FIB or 1 x PR0486 can be used on the same panel. Using more than one of these adapters on the same panel can affect the network connection setup on each adapter.

*** Please note that part number PR0484 does not include the Refrigeration Performance Indicator feature. Only PR0474 – PR0479 are included with this activation.

The options above indicate if the part number is software only, hardware only or hardware & software.

Hardware only, plug and play. No software activation required.

Hardware & Software activation required. Software activation included in price.

Software only.

Appendix 4: Trim Heater Control

Energy savings via the Mercury range of case controllers can be achieved in a number of ways. One of which is pulsing the trim heater relay off for a given period of time. This can be achieved by utilising the Trim Heater Control energy feature in the DMTouch. RDM recommend that the Trim Heater Pulse Module (PR0723) is used in all instances of trim control. This module is fitted in between the trim heater of the case and the relay output of the Mercury case controller which is pulsing the trim heater. The trim heater module output provides a smoother power distribution, compared to using the Mercury case controller trim relay output direct, as it switches at the zero-voltage crossover point. Switching the trim heater on and off via a normal relay, without using the RDM trim heater pulse module, may damage the trim heater and reduce the operational life of the heater. Please see the Trim Heater Pulse Module user guide for further details.

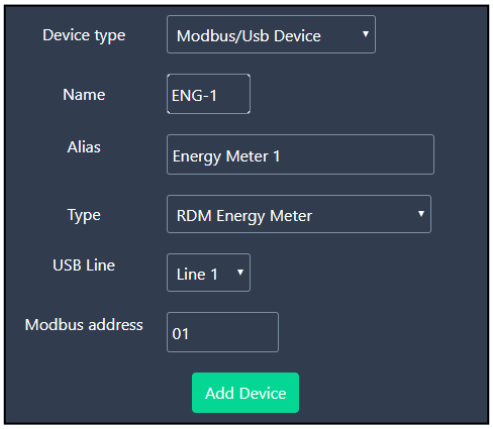
Appendix 5: Terms of Use

Software running on this equipment is licensed for use. In using this equipment, you are agreeing to Resource Data Management Ltd's standard Terms and Conditions for Software Licensing. To obtain a copy of the Terms and Conditions please visit our website www.resourcedm.com and select Technical Documentation.

Appendix 6: Modbus USB/TCP

Modbus® devices can be connected to the DMTouch using a USB/RS485 Modbus® Adapter (PR0623) or a Modbus® TCP/IP Gateway (PR0020 DIN MOD).

USB/RS485 Modbus® Adapter PR0623



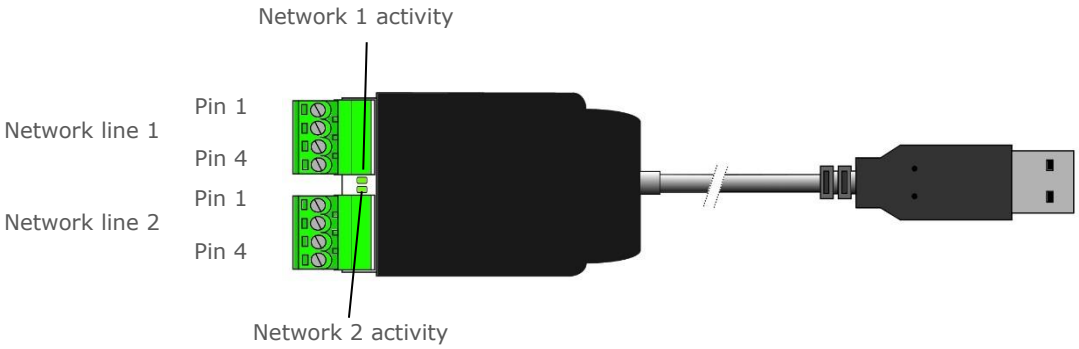
This device connects to one of the DMTouch's USB ports. Each Modbus® adapter has 2 RS485 network lines and each network line allows up to 32 Modbus® devices per line. The DMTouch currently supports a single USB/RS485 Modbus® adapter (PR0623) only. For Modbus template creation requests, please consult RDM accounts manager. **Note**: the DMT will only support reading Modbus registers of 32bits or less.

Configuration

From the Add Device page enter the following.

Device Type Select Modbus®/USB Device.
Name Enter a six-character name.
Alias Enter an appropriate description.
Type Select the desired Modbus® controller type from the list.
USB Line Select the network line on which the controller is physically connected.
Modbus® Address Enter the Modbus® address of the device.

Pin1 = Screen*
Pin2 = Data A/+
Pin3 = Unused
Pin4 = Data B/-

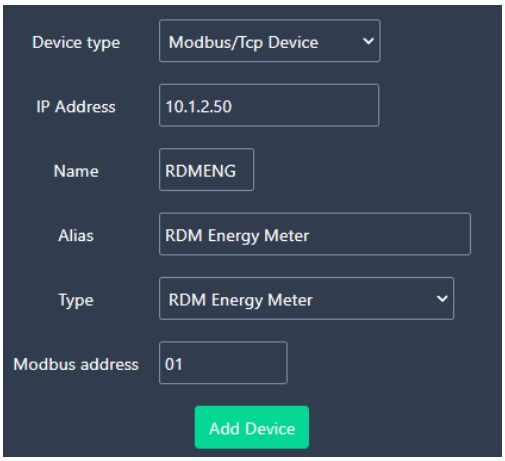


RS485 Configuration

Note: the RS485 configuration of the Adapter uses the following as default. Please see Modbus USB Setup to reconfigure (Issue 3 and above).

Baud rate 9600
Data bits 8
Parity No
Stop Bits 2

TCP/IP Modbus Module



Device Type Select Modbus/TCP Device.
IP Address Enter IP address of module.
Name Enter a six-character name.
Alias Enter an appropriate description.
Type Select the desired Modbus® controller type from the list
Modbus® Address Enter the Modbus® address of the device.

Note: DMTouch software 4.1 and above will allow you to specify a specific port to communicate on gateway. For Example, 10.1.2.50**:512** would use port 512.

Note: This product has been pre-fitted with a termination resistor on both network lines. This can be removed, if required. Please ensure that you follow standard RS485 wiring practices when using the adapter as this could have a negative effect on communication with the Modbus device.

Current Supported Modbus templates

Supported Modbus® Devices	
4MOD Pulse Counter	Janitza UMG 96S
AcuDC 240	KamstrumMultical 602
AEM33 Power Monitor	Measurlogic DTS
Aermac	Meter Map
AirBloc SmartElec2	MGS Gas 404A Detector
Autometer IC970	Nautil 910 Energy Meter
Carel Gas Detection	NSL Vacon Inverter Template
Carlo Gavazzi EM21	NXL Vacon Inverter Template
Carlo Gavazzi EM24-DIN	Panasonic Co2 Condensing Unit
Carlo Gavazzi WM14	Polin Bakery Controller
Climatic 60	Powerscout 24
Compact NSX	RDM Energy Meter
Countis E13, E23, E33, E43, E53	RDM Single Phase Energy Meter
CPC Infrared RLDS Unit 1	RESI Dali Lighting System
Cube 350	SabroeUnisab III
Daikin Convenipack	Safety Gas Detection System
Daikin ZEAS 24 Units	Schneider IEM3255
Daikin ZEAS Remote Condensing units 11-26	Schneider Masterpact NW16 H1
DeepSea Gen Com	Schneider PM5100
Dent Powerscout Energy meter	Schneider PM710
E44 Countis Energy Meter	Schneider PM750
ECM700	Shark Energy Meter
ECM903 Power Meter	SIRIO Energy Meter
Emerson Control Techniques VSD	Socomec Diris A14
EMM R4h Energy meter	Socomec Diris A20
Enercept H8035/H8036	Socomec Diris A40
Enviro ENV900	SPN ILC Energy Meter
Enviro ENV901	Star Azane Chiller
Enviro ENV901-THD	Toshiba FDP3 A/C Interface
Enviro ENV903-DR-485	TQ100 (30 Chan)
Enviro ENV910 Single Phase	TQ4000 (4 Chan)
Enviro ENV910 Three Phase	TQ4200 Mk 11 (16 Chan)
Flash D Power Monitor	TQ4200 Mk II (24 Chan)
Flash D Power Monitor (3 Wire)	TQ4300 (12 Chan)
CPC Spir Gas Detection	TQ4300 (16 Chan)
ICT Energy Meter EI	TQ4300 (24 Chan)
ICT Energy Meter EI Flex – 1phase	TQ8000 (16 Chan)
ICT Energy Meter EI Flex – 3phase	TQ8000 (24 Chan)
IME Nemo 96HD	TQ8000 (8 Chan)
Integra 1530	VIP396 Energy Meter
Integra Ci3/Ri3 Energy Meter	VIP396 Energy Meter (IEEE)
IntesisBox Interface for Mitsu.	Weirgrove
Invertek Eco Optidrive	CPC-IA-em2 1-16 Zones
Ispeed Inverter Drive	CPC-IR-em2 1-16 Zones
Janitza UMG 604	CPC-IR-em2 17-32 Zones
	CPC SP ir Vol

Note: Please be aware that the templates listed above were generated on request and designed to the customers' requirements. Please contact RDM Technical Support for information regarding the template. Furthermore, if you have a Modbus® device which is not listed please contact RDM Technical Support.

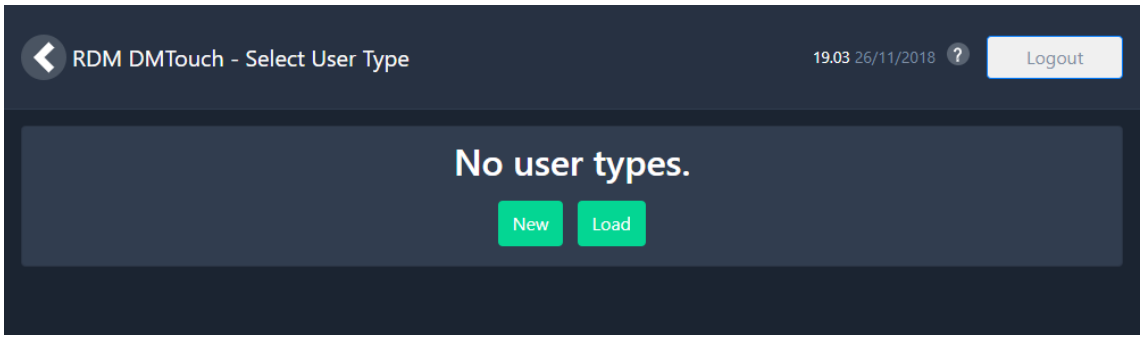
Appendix 7: Type Writer User Guide

Before any template can be added to the DMTouch, the feature must be enabled using part number PR0655-DM-TYP. Multiple user type 'slots' can be added using the same part number. It can either be ordered when purchasing the DMTouch, or later activated by RDM tech support. If the DMTouch is not remotely accessible then using the 'Add Feature' menu, an activation code can be given.

Note: Before using this feature, a full understanding of Modbus and the 3rd party unit is required. RDM Tech support will not offer assistance out with the bounds of our product.

From the Service Menu select: Devices/ Network/ Type Writer

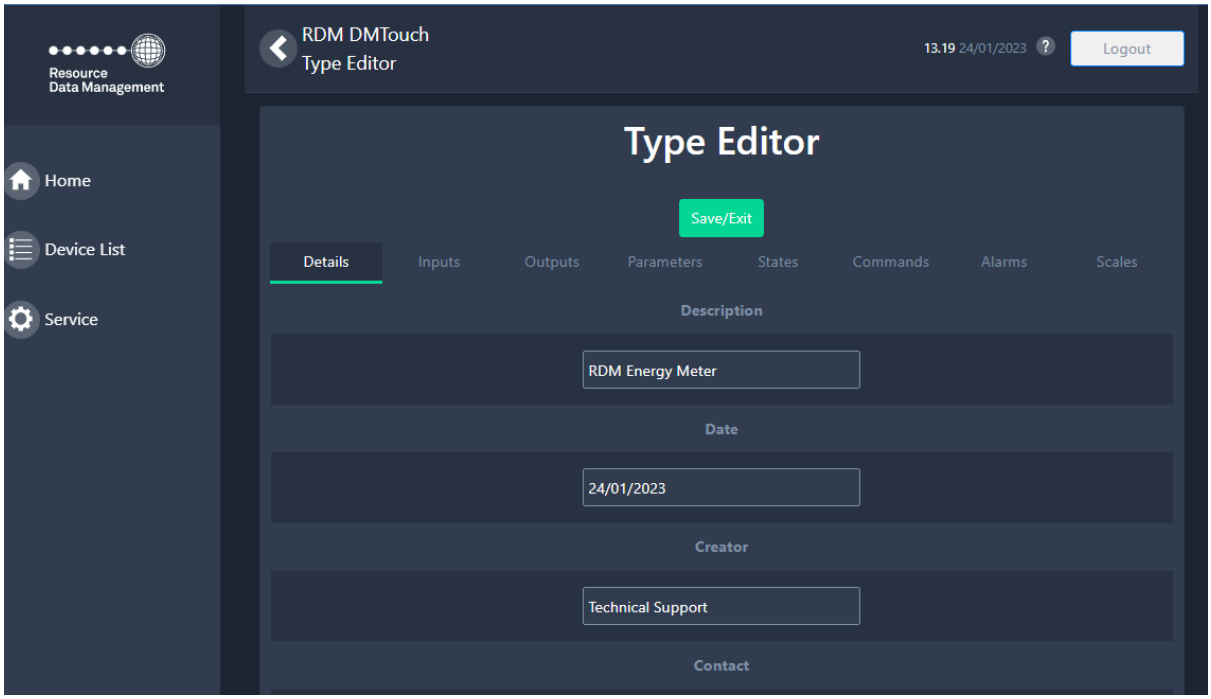
The Editor



Opening the Type Editor will result in the above page. At this point there are only two options, to either start a new 'template' or load a previously created one.

New template

Having clicked on 'New' it will launch the below.



As shown, there are seven tabs to select from; Details, Inputs, Outputs, Parameters, States, Commands, Alarms and Scales.

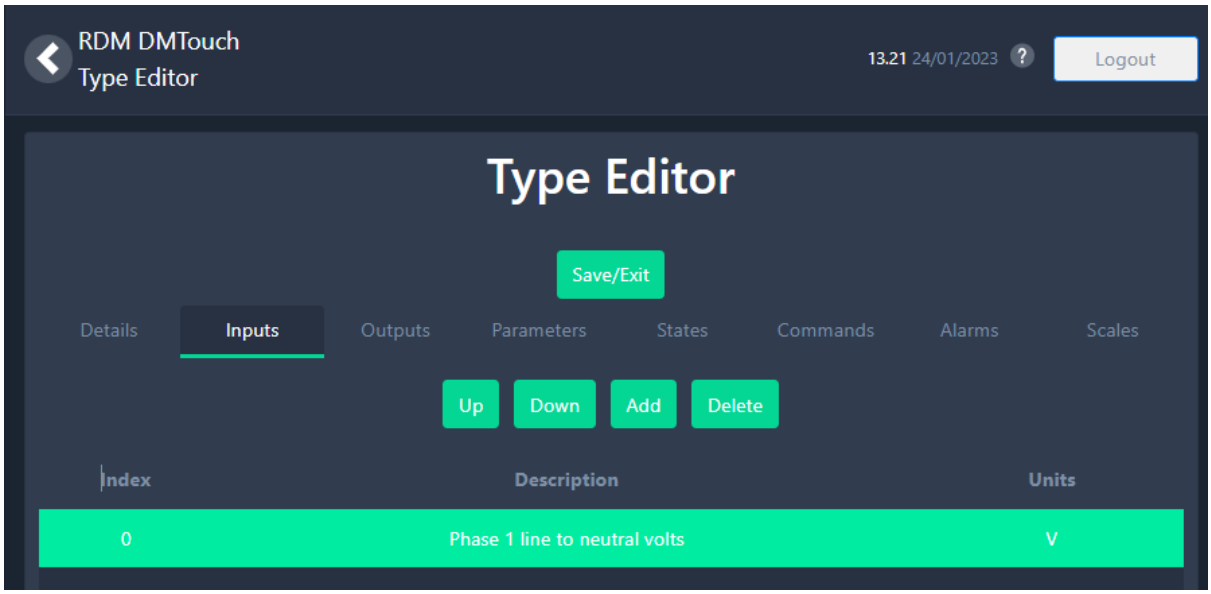
Note: Without 'OEM' (PR0655-DM-OEM-DEV) enabled, there will only be four visible tabs, it will not show; Outputs, Parameters or Alarms. For more information, please consult RDM Technical Support.

Details Tab

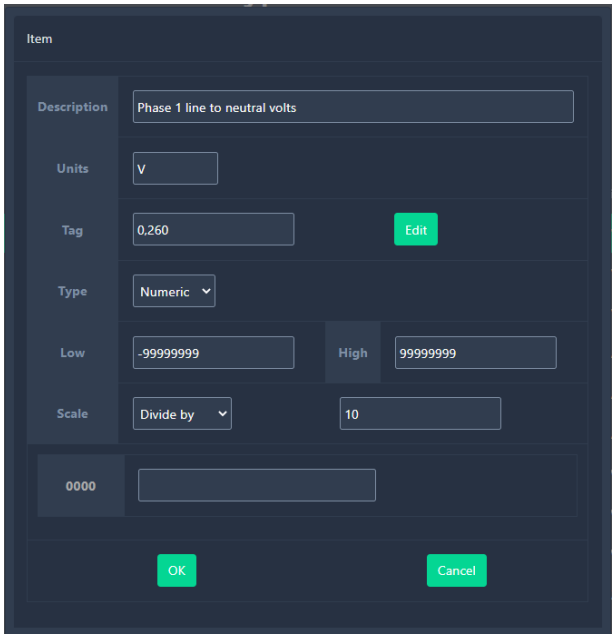
This allows general information relating to the template's description, date, creator's name along with the option to insert a password. Leave blank if no password is necessary.

Inputs /Outputs Tab

The input and outputs section is where the viewable IO of the device is listed and configured with the corresponding Modbus register, type etc.



By either using the 'Add' button to add a new item, or by double clicking on the item already listed it will open a window to change the item's details.



Description

This is the text string that is shown to identify the item.

Units

Inset the unit type associated to the value. E.g. V, A, kwHr, Lux etc.

Type

The type will either be 'numeric' or 'string'.

When set to numeric it will simply show the number from the register. The high and low fields should be used to indicate the potential limits to the value.

If set to 'string' it will associate the text (inserted in the fields) to the numerical value in the register. By using the fields at the bottom of the window, beginning at 0000, enter the text you want to appear in the field next to it. Pressing the 'Return' key will create a new field with a '0001' next to it. Again, enter the text to be associated to the value.

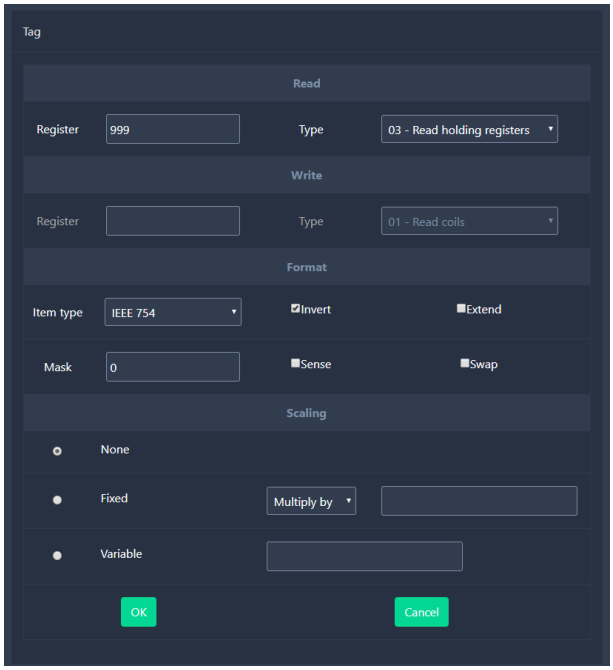
E.g. having the following inserted; '0000' – Off; '0001' – On. When the register reads either a 0 or a 1, it will show in the IO list either, 'Off' or 'On'.

Scale

Provides the option of scaling the register value by dividing or multiplication.

Tag

The 'tag' requires all the details of how to read the Modbus register and the type of data it holds so it can be translated to the relevant information when extracted. Click 'Edit'.



Register

Insert the register number for the template to look at.

Type

Select the Modbus function to read from the register. The editor (Read Only) only supports functions 01 to 04.

Item type

Select the type of data that the Modbus register holds. The options are;

- Word – reads 16bits
- Dword – reads x2 16bit registers (32 bits)
- IEEE 754 – reads x2 16bit registers and treats as a 32-bit floating-point number
- Coil – reads a single bit
- None – no type selected.
- Large-64 – reads a 64bit register but only uses the lower 32bits
- Large-64/x – reads a 64bit register, divides by x but only uses the lower 32bits

Note: when using any of the 'large-64' item types, it reads in all 64 bits but can only use the lower 32bits.

Mask

Insert the mask required. For example, this may be required if the Modbus register holds individual bits to be read from a register containing a word. For example, if a register (16 bits) returned 1111 0000 101**01**000, to read bit 3, insert the mask '8' (decimal). To read bit 4, enter 16 etc.

Invert

Refers to how the byte data is read from the register. Whether it is big-endian or little-endian. It can be used in either 16- or 32-bit registers. For example;

Example 1 – 16 bits
If the returned data is in the byte sequence: AA BB

With Invert off it will be read as:
BBAA

With Invert on it will be read as:
AABB

Example 2 – 32 bits
If the returned data is in the byte sequence: AA BB CC DD

With Invert off it will be read as:
DDCCBBAA

With Invert on it will be read as:
AABBCCDD

Extend

If the value read can be a negative value, then tick this box, for example, a signed integer. When ticked, it will use Two's Complement to decipher if the number is negative or not. If unticked, it will assume the full word/ register is positive.

Sense

Inverts the 'sense' of a binary value. I.e., when ticked, it interprets a returned '0' value as 'on', '1' as 'off'. Normally only used with coils or 'masked' values reading single bits.

Swap

The 'Swap' function can only be used with 32bit registers. When checked, it will swap the ordering of the returned words. For example;

Example 1
If the returned data is in the byte sequence: AA BB CC DD

With Swap off it will be read as:
DDCCBBAA

With Swap on it will be read as:
BBAADDCC

If required, both Invert and Swap functions can be used, for example;

Example 2
If the returned data is in the byte sequence: AA BB CC DD

With Invert Off Swap Off it will be read as:
DDCCBBAA

With Invert Off Swap On it will be read as:
BBAADDCC
With Invert On Swap Off it will be read as:
AABBCCDD

With Invert On Swap On it will be read as:
CCDDAABB

Scaling

Scaling has 3 types; None, Fixed or Variable.

None: No scaling will be applied to the value.
Fixed: Choose between 'multiply' or 'divide' by the value entered.
Variable: Used in conjunction with the 'Scales' section. In the field the variables; $V, $0, $1, $2…. $N can be used to manipulate the value. $V refers to the value taken from the register. $0, $1, $2…$N refer to the indexed scale registers (in Scale Tab) where index 0 is $0, index 1 is $1, index 2 is $2 and so on.

The operands; '+' (plus); '-' (minus); '*' (multiply); '/' (divide); '%' (mod); '&' (bitwise and); '^' (bitwise xor) 'eq'; 'noteq'; 'pow';'log''log 10'; 'exp' and 'sqrt' can be used in the 'variable' field.

E.g., with the variable scale set to "$V*$0" it will multiply the value in the register by that of the value in the scaling register '$0'.

Modbus Test

This function allows the user to test a value coming back from a specific register. See Modbus Test for more information.

Parameters, States, Commands & Alarms Tabs

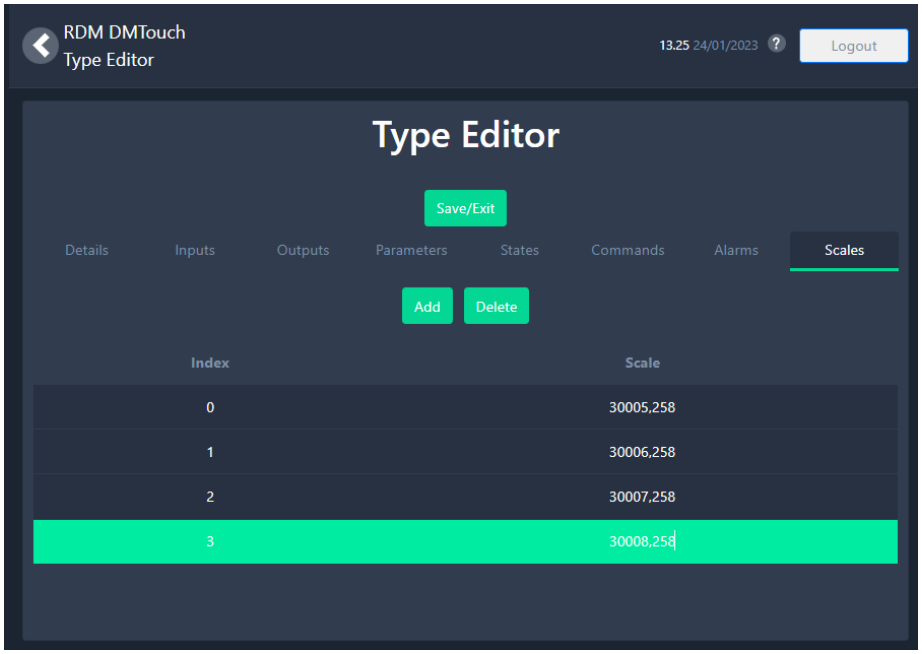
A similar configuration process to that of the Inputs tab can be used with the; Outputs, Parameters, States, Commands and Alarm tabs.

Note: The States tab allows for the device state to be shown in the Status column on the Device page on the DMTouch. It can also be used if setting the device up to use the Performance feature.

Note: The Output, Parameters, States and Command tabs will only be visible with the Type Writer OEM feature activated in the panel. For more information, please consult RDM Sales.

Scales Tab

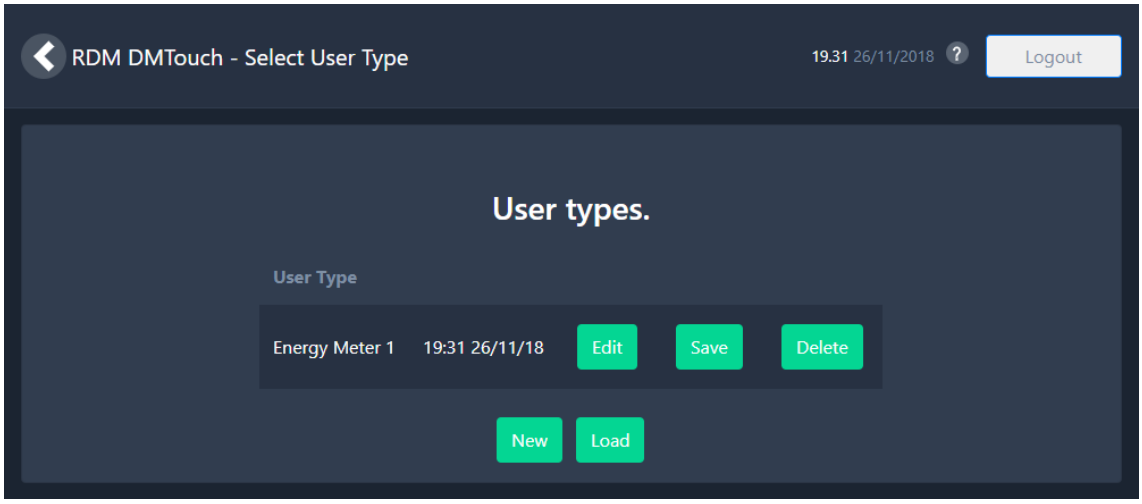
In some devices, there are dedicated registers advising of the scale applied to the values in other registers. In this section insert the details of how to read these registers. It uses the same format as the input section to define the registers.



Once created, the scaling values taken can be applied to the values by using the method described in the variable scaling section. The scales, as mentioned can be referred to by using $0, $1, $2, $3.

Save/ Exit Tab

Once the template is complete, click the 'Save/ Exit' button, this will confirm the save. It will also offer the options to exit without saving or 'cancel' the exit. The template will be saved and accessible through the Type Writer menu.



Following the creation, the template can be saved to a local PC, using the 'Save' button. The format will be saved as an xxxx.typ. When saved, the template can be re-used on other devices as long as the User Template feature is activated.

**** When editing existing type file, the user must remove then re-add the device before restarting DMTouch or MiniDM**

Load

The 'Load' feature can be used to utilise a previously generated (and saved) type file on another device. When clicked, navigate to the saved type file on your local PC and load it on.

Now that the type file has been generated it can be used to communicate with the third-party device. Using the method outlined in Add Device section, the type will be in the drop-down menu to select.

Appendix 8: Menus and Access Levels

Alarms	Site	Service	Installer
Alarm Summary		✓	✓
Alarm Index			✓
Alarm Actions			✓
Default Actions			✓
Alarm Times			✓
Modem Setup			✓
Mail Server Setup			✓
Warning Setup			✓
Accept All Alarms			✓
Clear Alarm Log			✓
Send All Alarms			✓
Devices	**Site**	**Service**	**Installer**
Set Parameters		✓	✓
Set Shared Parameters		✓	✓
Set Timed Parameters		✓	✓
Timed Parameter Information		✓	✓
Default Parameters			✓
Parameter History		✓	✓
Aliases	**Site**	**Service**	**Installer**
Names		✓	✓
Alarms		✓	✓
Items		✓	✓
Visibility			✓
Set Shared Visibility			✓
Item Matching			✓
Local IO	**Site**	**Service**	**Installer**
Input Setup			✓
Output Setup			✓
Input Information			✓
Output Information			✓
Extension			✓
User Setup	**Site**	**Service**	**Installer**
User List	✓	✓	✓
Add User	✓	✓	✓
Remove User	✓	✓	✓
Elevations	✓	✓	✓
Login Activity			✓
Authentication Setup			✓
Energy	**Site**	**Service**	**Installer**
Pack Setup			✓
Case Setup		✓	✓

Network	Site	Service	Installer
Network Errors			✓
Remove Device		✓	✓
Remove Network			✓
Add Device			✓
Network Scan			✓
RDM Bluetooth Wireless Mesh			✓
Philips Envision Setup			✓
Micro Thermo Import			✓
BACnet/RDM-485 Setup			✓
BACnet/RDM-485 Pending			✓
BACnet Server Setup			✓
BACnet Server Devices			✓
Type Writer			✓
Broadcast Receive List		✓	✓
XLON Setup			✓
Modbus USB Setup			✓
Modbus Test			✓
Device Info		✓	✓
Device Reset			✓
Case Setup		✓	✓
Split Monitor			✓
Split Device			✓
Merge Devices			✓
Hide Device			✓
TDB Editor		✓	✓
Plant TDB Upload/Download			✓
Mercury TDB			✓
Device Backup			✓
CPT Setup			✓
Device CPT			✓
Script Setup			✓
Mimic Setup		✓	✓
Manage Custom Mimics		✓	✓
Show Asset			✓
Disciplines	**Site**	**Service**	**Installer**
Disciplines			✓
Device Disciplines			✓
User Disciplines			✓
Site	**Site**	**Service**	**Installer**
Site Setup			✓
Save Site Configuration		✓	✓

Energy (cont.)	Site	Service	Installer
Night Blinds			✓
Condenser TD			✓
Performance			✓
Trim Control			✓
Energy Monitoring			✓
Display Setup			✓
Layouts / Custom Home Screen	Site	Service	Installer
Custom Home Screen			✓
Manage Layouts			✓
Timers	**Site**	**Service**	**Installer**
Gp Timers		✓	✓
Gp Timer Report	✓	✓	✓
Defrost Timers		✓	✓
Defrost Report		✓	✓
Defrost Sources			✓
Shuttle	**Site**	**Service**	**Installer**
Shuttle Limits		✓	✓
Saved Data		✓	✓
Log		✓	✓

Restore Site Configuration			✓
System Config		✓	✓
Add Feature			✓
Information	**Site**	**Service**	**Installer**
System Log		✓	✓
Software Version			✓
DHCP Information			✓
Touch XL Status			✓
Network Statistics			✓
Notepad		✓	✓
Documents	✓	✓	✓
USB Info			✓
Miscellaneous	**Site**	**Service**	**Installer**
System Restart			✓
System Dump			✓
Set Time	✓	✓	✓
Clear Consoles			✓
Network Card Setup			✓
4G Dongle Setup			✓
Export Log Data	✓	✓	✓
Automatic Export Setup		✓	✓
Delete Type File			✓
Upgrade Software			✓
SSL Setup			✓
MQTT Setup			✓
LCD Setup			✓

Appendix 9: PWM Duty Cycle

Table 1: Duty Cycle Tolerance across Frequency Range

Frequency Range	Duty Cycle Tolerance
F ≤ 5kHz	±2%
5kHz < F ≤ 10kHz	±3%
F > 10kHz	±5%

Note: Tolerance is given as a percentage of the period as opposed to a percentage of the Duty Cycle e.g. a Duty Cycle of 50% ±3% gives a range of: 47% ≤ D ≤ 53%.

Period Resolution and Frequency Selection

Useful Formulae:

$$Frequency = \frac{1}{Period}$$

$$Period = \frac{1}{Frequency}$$

The period resolution is the minimum increment available to the period parameter. Frequency selection is governed by the max/min limits of the period and the resolution of the period. Any frequency in the given range may be selected provided that its period is a multiple of 10µs.

For example:
3000Hz requires a period of 333.333µs which is not available.
Rounding this to the nearest 10µs results in a period of 330µs.
This provides the closest available frequency of 3030Hz.

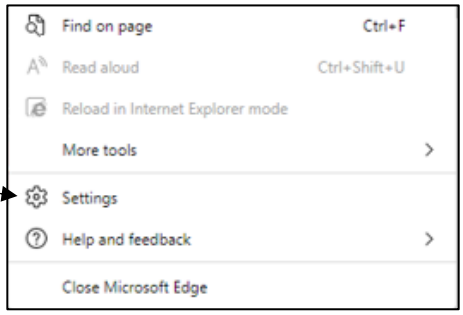
Appendix 10: System Dump (Edge 11)

The following instructions explain how to make a change to the Edge browser on a PC or laptop running Windows 11 in order to view a System Dump downloaded from a DMTouch.

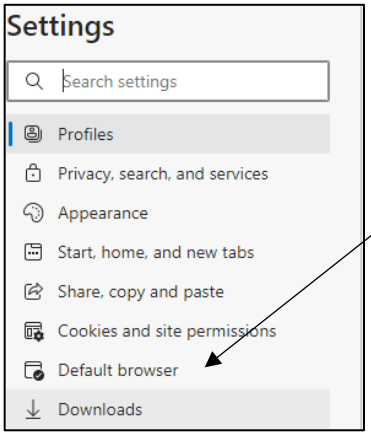
- Download the System Dump file from the DMTouch by going through the following menus: **System>Miscellaneous>System Dump**.
- Save the zipped folder to your PC Desktop.
- Right click on the folder and select Extract All.
- Open the extracted folder, right click on the dump xml file and select Open with Edge.
- If the file opens up as a blank white screen, then follow the steps below:



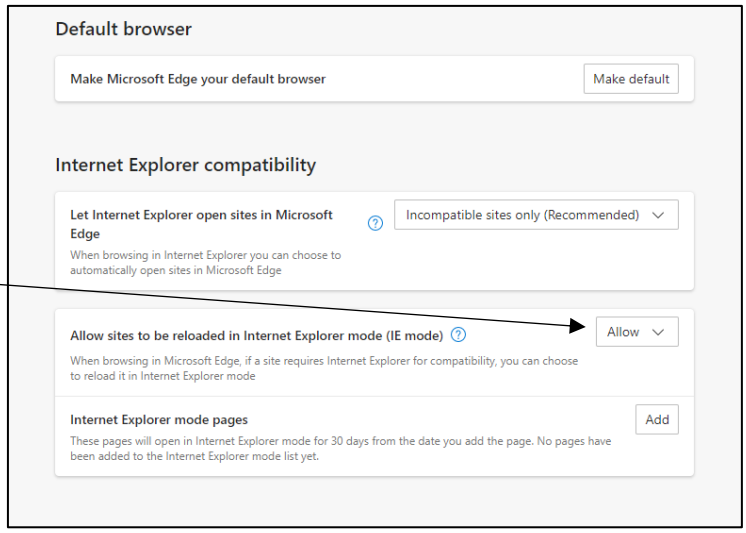
Click on the 3 dots at the top right-hand corner of the Edge browser.



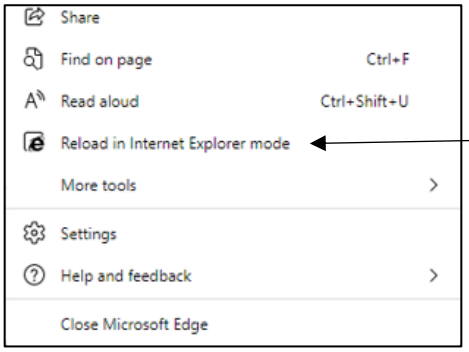
Then select the Settings option at the bottom of the list.



Select the Default browser option from the Settings menu that appears on the left-hand side of the page.



On the Default browser settings use the drop down box to set the option for Allow sites to be reloaded in Internet Explorer mode (IE mode) to 'Allow' and then restart the Edge browser.



Once the above actions have all been done you can open the XML file with Edge and click on the 3 dots at the top of the page again.
At the bottom of the list there will be an option to 'Reload in Internet Explorer mode'. Select this and the System Dump will be available to view.

Appendix 11: Refrigeration Performance Indicator (RPI)- PR0471-RPI

Please note that this feature is not supported on the miniDM platform.

Refrigeration Performance Indicator (RPI) measures refrigeration system energy output including calculated cabinet and cold room evaporator duties, heat reclaim energy output, electrical energy input, and generates an overall electrical Coefficient of Performance (COPe) value.

Each energy item is shown as a live kW value, a last hour kWh total, a running total kWh for today from midnight, and a total kWh over the previous 24 hours. Duties are then also shown as a per size value to enable like for like comparisons across different cabinet lengths or cold room sizes. Sizes can be set per metre or per foot to represent cabinet lengths, along with per squared or per cubed options to represent cold rooms. Per size summary items are averaged across devices with the same size type and COPe values are averaged over time. False load evaporator devices can also be added to display duty, although this is not a useful energy output so is not added to the overall duty or COP calculations.

This enables asset to asset, system to system, site to site comparisons, and pro-active maintenance and energy management data. This also allows analysis of any changes or initiatives implemented to cabinets, cold rooms or systems. Having asset duty data along with overall electrical COP levels also allows a much simpler method of applying a monetary value against asset or system operations. This is a separate DM Touch energy software feature and needs enabling to configure. Please contact RDM Technical Support for further information.

Firstly, each pack should be configured within the Service / System / Energy / Pack Setup page. For dual temperature systems each separate section such as HT or LT should be added as separate packs. Multiple packs can then be added to a single RPI system. The critical items that must be configured within this page are the pack controller device name as the "Pack Device", the "Suction Pressure Input" item from the pack controller, the "Liquid Pressure Device" name and "Liquid Pressure Input" item, along with the relevant "Refrigerant" type.

These two pressure items are critical in assessing the pressure difference across the cabinet and cold room evaporator valves. Should a liquid line pressure item not be available the nearest pressure item should be utilised such as receiver pressure. Having a separate device name for each of these points also allows the allocation of a pressure item from a device measuring pressure downstream of the refrigeration plant if available. Where site to site comparisons are to be made the pressure points being set should be kept standard to ensure like for like comparisons.

Secondly, all cabinet and cold room evaporator controllers should be assigned to the relevant pack within the Service / System / Energy / Case Setup page. Only the "Pack" assignment from this page is utilised for RPI. There is a separate size setting within the RPI setup page to allow configuration of cabinet length and cold room area or volume.

Then ensure that controller "Superheat" and "Valve" items have been configured within the Service / Devices / Aliases / Item Matching setup page for the relevant items from the devices connected. Where a controller has multiple evaporators, the relevant valve opening items can be selected within Item Matching and this will add additional items within the RPI Device Setup page. Also, where a controller has multiple valve outputs and has automatically added these within the Item Matching page, but where the device only has a single evaporator and valve, any secondary valve outputs should be removed from the Item Matching Valve item. The following shows a controller that has an option for an electronic expansion valve (EEV) "Valve Opening" item as well as a liquid line solenoid "Liq. Line Valve" item:



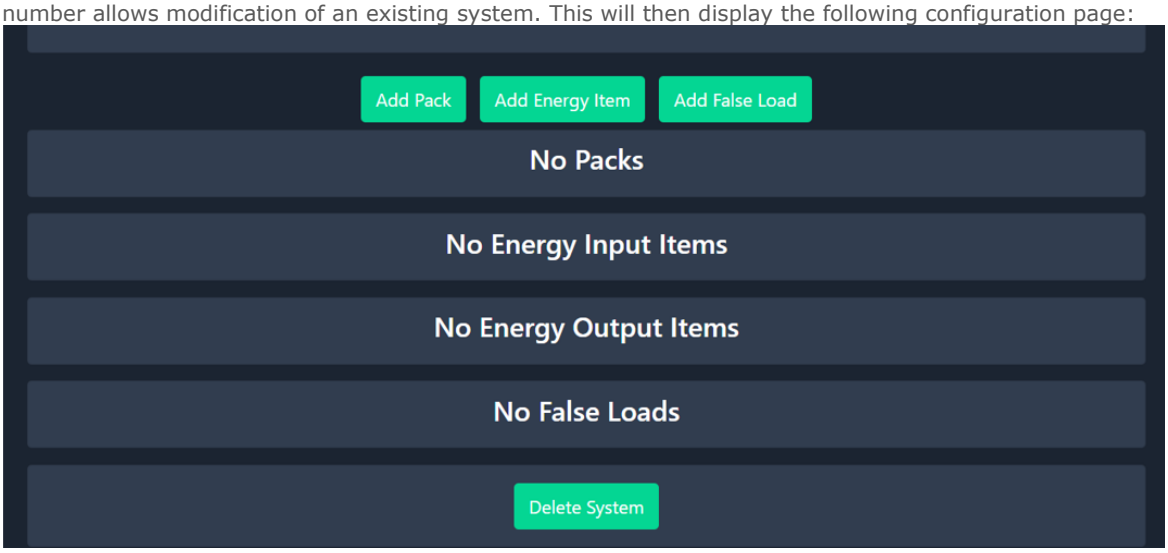
In this case the "Liq. Line Valve" items should be removed to leave only the "Valve Opening" item. Only EEV items resulting in a percentage value are utilised for calculations within RPI. This would leave the following setup:



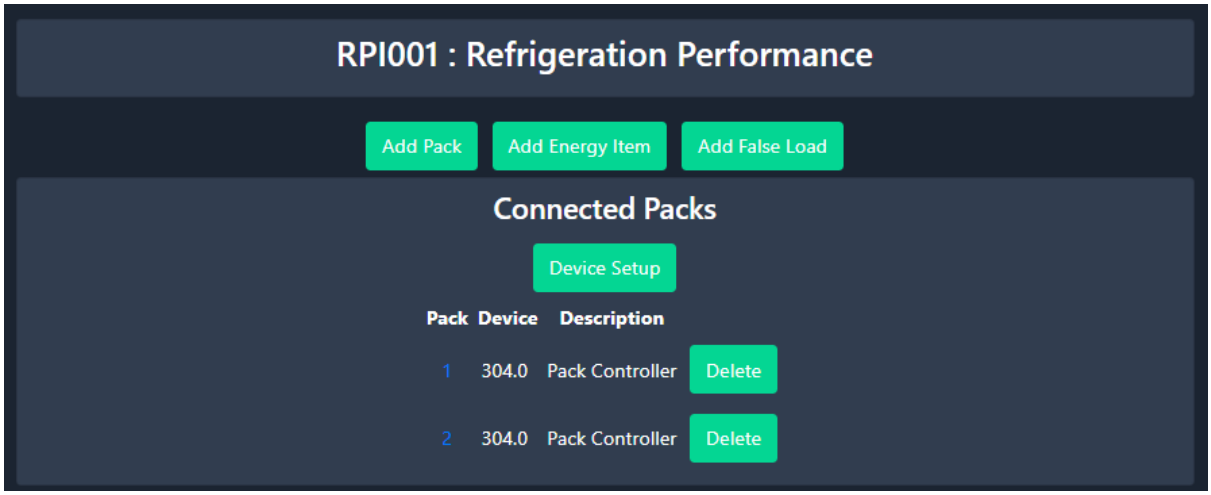
Once these items are configured enter the RPI configuration pages via Service / System / Energy / Refrigeration Performance which will display the following page that is similar to the pack setup page allowing multiple systems to be added:



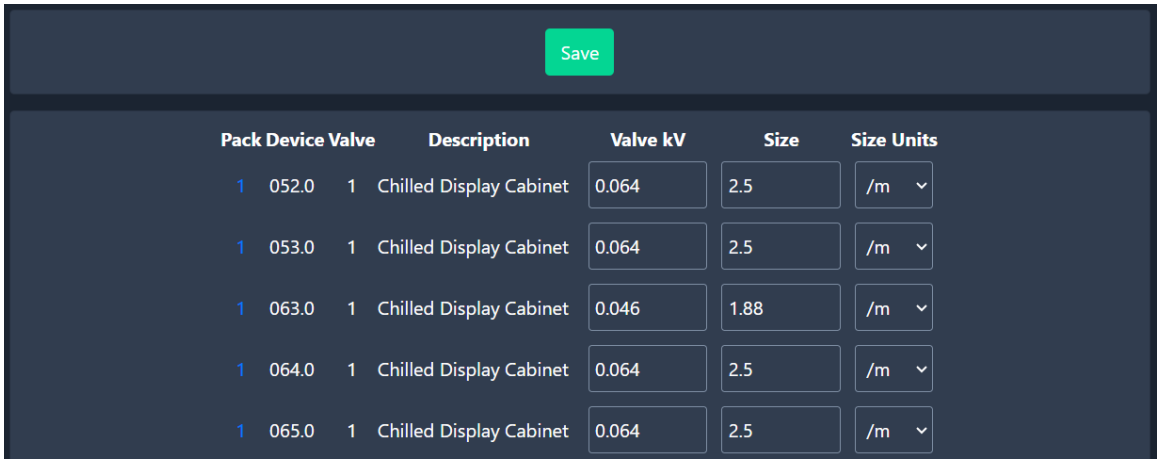
Select the first number to add a new system, or the next available number when adding multiple systems. Once systems have been configured, they will be highlighted. Selecting a highlighted configured system number allows modification of an existing system. This will then display the following configuration page:



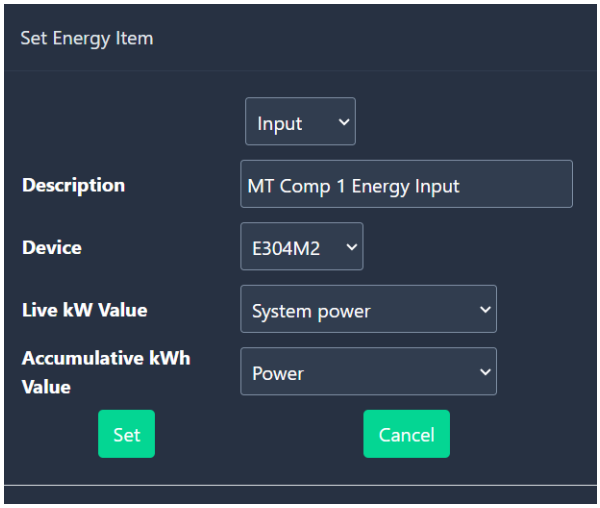
Firstly, add the relevant packs to the system from the "Add Pack" button. This will provide a drop-down selection list with the pack numbers as configured from the pack setup pages. Once a pack has been added an RPI system will be created and a virtual device will appear within the main device list starting as RPI001 followed by RPI002, etc. this page will show the following:



Next, click on the "Device Setup" button. This will then display the device list including the devices assigned to that pack as follows:



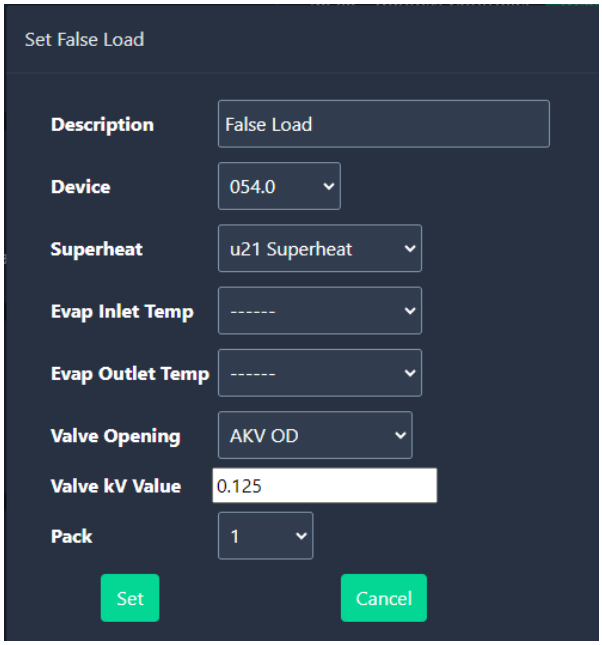
Within this page set the "Valve kV" flow rate value which can be found from the valve and orifice size data sheet information, the "Size Units" and the "Size" values for each cabinet or cold room evaporator.
Where available then click on the "Add Energy Item" button to add either an electrical meter energy input item or a heat reclaim energy output item. Should no energy meters be available, cabinet and cold room evaporator duties will still be calculated but overall COPe values will not be available. This will display the following window:



Select either "Input" or "Output" type, enter a suitable text "Description" and select the relevant controller device name. Then select the running "Live kW Value" from the device item list and the "Accumulative kWh Value" item.

Only a single electrical energy meter is required to cover the refrigeration plant load, although for analysis purposes it may be desirable to install multiple sub-metering to monitor individual loads within the refrigeration plant. Should both a main incoming supply be metered as well as sub-metering, do not add all meters to RPI as they will all be added together for the total electrical input which would double the actual electrical load.

Where any false load evaporators are utilised, these can be added by clicking the "Add False Load" button. This will display the following window:



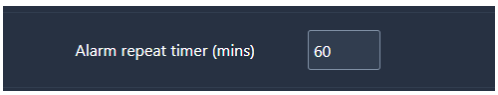
A suitable text description should be entered and as with cabinet and cold room evaporator devices the "Device" name, "Superheat" and "Valve Opening" items need to be configured although where a superheat item is not available, the "Evap Inlet Temp" and "Evap Outlet Temp" items can be configured to calculate the superheat value. The "Valve kV Value" must be set along with selection of the "Pack" number for the relevant pack section that the false load evaporator is linked to.

Note: Where only monitoring plant electrical input energy and not cabinet or cold room electrical input energy, this will result in higher COP values being calculated than the overall system will have.

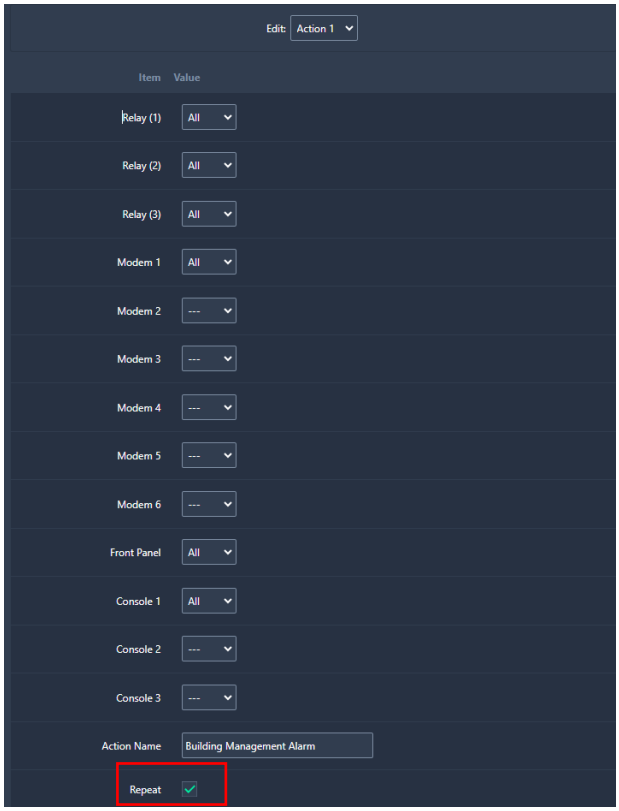
Appendix 11: Repeat Alarm Setup

The DMTouch has the capability to generate a repeat alarm after a specified time delay for a device that has alarmed out and the alarm has not cleared. This feature ensures that if an alarm condition persists and is not cleared, the system will re-trigger the alarm after the specified time interval. Adjusting this setting allows you to control how frequently these repeat alarms occur.

To configure the repeat alarm first enter a time in the Alarm repeat timer setting within the Site Setup page (Service – Site – Site Setup). The default is set to 60 mins but this can be altered to suit the user.

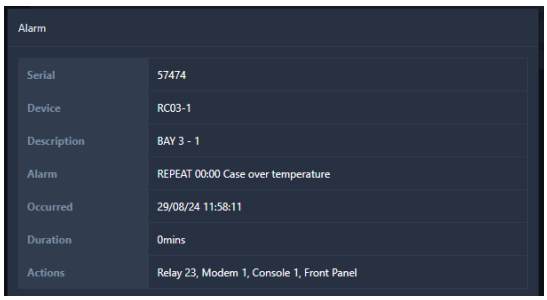


The second part that needs to be completed is to create an alarm action that has the repeat option ticked. This can be found under Service – Alarms – Alarm Actions. Below is an example of an action that has been set up with the repeat option. Once this has been done, this action can be assigned against controllers alarms.



Below is an example of the repeat alarm being generated. When a device first alarms, the system generates an alarm notification as usual. This initial alarm message is prefixed with **"REPEAT 00:00"**, indicating that it is an alarm that will repeat if it remains unresolved. If the alarm condition is still active after the specified time delay (e.g. 60 minutes), the system automatically clears the original alarm and a new alarm is generated, this time prefixed with **"REPEAT 01:00"**. This prefix indicates that the alarm has now been active for over 60 minutes without being cleared. This pattern will continue (i.e. REPEAT 02:00, REPEAT 03:00), until the alarm is cleared.

1ST Alarm



2ND Alarm

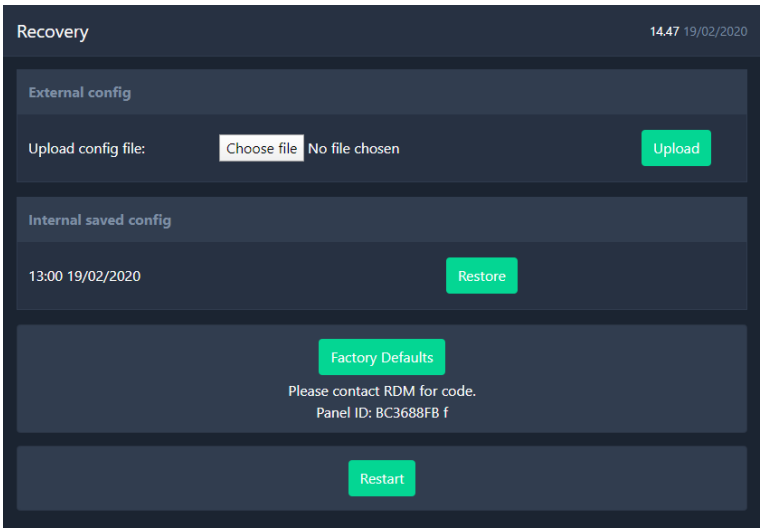


DMTouch Reset or Recovery

On versions of DMTouch manufactured after December 2016, there is a manual reset button (Data Manager) located on the front, below the power and alarm LEDs. Pressing it in continuously for 30 seconds will cause the unit to perform a full system reset.

Note: This button must be left uncovered.

To enter the DMTouch into a recovery mode, power the unit down completely. Then reinstate power while holding down the reset (Data Manager) button. A page similar to below will be shown;



The user can select one of the options shown;

Upload External Config	Using the 'Choose File' box select a file from either a local PC or the USB stick (when using the Front Touch Screen.
Restore Internal Config	The DMTouch periodically saves a backup configuration on a daily basis. Select this option to restore the DMTouch back to that of the time shown.
Factory Default	By selecting 'Factory Default' this will delete all logs, databases, configurations and revert the panel back to its default state. Before this can be achieved, the end user must contact RDM Technical Support for a unique passcode based on the **panel ID**.
Restart	Option allows the user to manually restart the system.

Surge Protection

Installations subject to high levels of electrical transients (Voltage spikes/lightning strikes) may require the fitting of protection devices to the external wiring of device's Mains supply input, RS485 ports, CAN port, or Ethernet ports. Please refer to document DM & Network Surge Protection for information on suitable devices and their application. Refer to the device manufacturers directions for detailed fitting instructions.

DMTouch Battery Transportation

Please note if the DMTouch has a battery backup kit fitted and the DMTouch is being transported then the battery must be removed from the DMTouch and fitted in the cardboard retaining filler which ships with the DMTouch to prevent damage during transit. RDM recommend that the DMTouch is restarted, once the installation is complete, if any new hardware is connected for example part PR0482. Please refer to the appropriate installation guide, found on the RDM website, before installing any of the above additional hardware.

Trademarks

Genus® is a registered trademark of Honeywell Control Systems Ltd
Modbus® is a registered trademark of Modbus® Organization Inc
BACnet® is a registered trademark of the American Society of Heating, Refrigeration and Air Conditioning Engineers (ASHRAE)
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LON® and LON® Talk® are registered trademarks of the EcheLON® Corporation
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Siemens® is a registered trademark of Siemens® AG
Carel® is a registered trademark of CAREL® INDUSTRIES S.R.L
Bluetooth®is a registered trademark of Bluetooth SIG.

DM Configuration Files

NEVER attempt to install a configuration file from a newer Data Manager Software version into a Data Manager with an older software version as this could result in complete system failure.

RDM will not be liable for anything that occurs as a result of this action having been carried out.

For further information or for questions regarding this matter please feel free to contact RDM Technical Support

One Time Access Codes

In the unlikely event the front panel PIN and username and/or password is unknown, for example a new service contract is undertaken and the previous contractor has not passed across the login credentials, it is possible for RDM Technical Support to generate a Data Manager specific, time limited, 'ONCE' code which allows temporary access to only the Data Manager in question at install level allowing an engineer to add a new 'Install' level user. To do this RDM requires in writing, from the end-user/owner of the Data Manager, permission to provide access to the Data Manager. There will also be an administration charge for this request.

For further information please contact Technical Support.

RDM Overrides

Note: This feature should only be used by individuals who are fully aware of the implications of overriding the input or output. RDM will not be held responsible for any damage or adverse effects resulting from the use of this feature.

Disclaimer

The specifications of the product detailed in this document may change without notice. RDM Ltd shall not be liable for errors or omissions, for incidental or consequential damages, directly or indirectly, in connection with the furnishing, performance or misuse of this product or document.

Technical Specifications

Note: the product must be used as detailed by the manufacturer, failure to comply may result in the level of protection being affected.

Power Requirements

	DMTouch	miniDM
Supply Voltage Range	100 – 240 Vac ±10%	24 Vac ±10% OR 24 Vdc ±10%
Supply Frequency	50 – 60 Hz	50 – 60 Hz ± 10% (AC only)
Maximum supply current	1 Amps	1.8 Amps
Typical supply current	<1 Amp	
	The host equipment must provide a suitable external over-current protection device such as: Fuse: 1A, 240 Vac Anti-surge (T) HRC conforming to IEC 60127 Or MCB: 1A, 240 VAC Type C conforming to BS EN 60898	The host equipment must provide a suitable external over-current protection device such as: Fuse: 2A, 240 Vac Anti-surge (T) HRC conforming to IEC 60127 Or MCB: 2A, 240 VAC Type C conforming to BS EN 60898

Safety

	DMTouch	miniDM
Safety	EN61010	EN 61010-1:2010, UL 62368-1
EMC	EN61326, FCC Part 15b	EN 61326-1:2013 FCC CFR 47 Parts 15.107 & 15.109 Class A
Ventilation	There is no requirement for forced cooling ventilation	
Class 2 Insulation	No protective Earth is required*	**No** protective Earth is required. A functional Earth may be fitted in noisy environments.
Disposal	Please observe local legislation with regards to electrical products	
Origins	Product designed in the UK manufactured in Taiwan	
Battery	The DMTouch contains a lithium battery to retain time and date information when not powered. Caution: battery is not user replaceable and there is a danger of explosion if the battery is replaced incorrectly.	The miniDM contains a lithium battery to retain time and date information when the controller is not powered. Caution: this battery is not user replaceable and there is a danger of explosion if the battery is replaced incorrectly.

* The earth connection on the DMTouch is a functional earth and this must be used to ensure the correct operation.

Environmental

	DMTouch	miniDM
Operating temperature range	-10^{0}C to +60^{0}C	-20°C to +65°C
Operating Humidity	80% maximum	
Storage temperature range	-20^{0}C to +65^{0}C	-30°C to +65°C
Environmental	Indoor use at altitudes up to 2000m, Pollution Degree 1, Installation Category II. Voltage fluctuations not to exceed ±10% of nominal voltage	Indoor use at altitudes up to 2000m, pollution degree 2, installation category II. Voltage fluctuations not to exceed ±10% of nominal voltage.
Size	310mm (W) x 330mm (H) x 96mm (D)	157mm (W) x 101mm (H) x 67mm (D)
Weight	2300 Grams Weight is dependent on the DM configuration as some items are optional.	498 g (1.09 lbs)



Please ensure all power is switched off before installing or maintaining this product.

Display

	DMTouch	miniDM
Type	25.65cm (10.1") a-Si TFT Colour	N/A
Resolution (pixels)	1280 x 800	N/A
Brightness (cd/m²)	450	N/A
Contrast Ratio	800:1	N/A
Viewing Angle	70º	N/A
Backlight	LED	N/A
Backlight Lifespan	15,000 hours	N/A

Touch Interface

	DMTouch	miniDM
Type	Balance Capacitive	N/A
Resolution (dot)	1280x800	N/A
Light Transmission	>88%	N/A

DM Touch Inputs

Input resistance	3.01K Ohms (for PTC or NTC type probes)
Input type	Selectable probe types
Rated voltage	3.3V

Rated for Measurement category I: - Category 1 allows for measurements on circuits not directly connected to an AC power supply examples of which are protected secondary's and limited energy circuits. Do not use equipment for measurement categories II, III & IV.

miniDM Status Inputs

	0 volt return or 24 Vac (24 Vac must be the same as the supply 24 Vac). If a 24Vac signal is being sourced from the controller power supply then do not ground the Status Input common rail, this is grounded internally, only a 24Vac signal taken from the controller power supply as an input is required. If using an external 24Vac signal i.e. not obtained from the controller power supply then it is necessary to supply the 24Vac signal as well as the 0 Volt for the status input common from the external power supply.

miniDM Analogue Inputs

4-20mA	4-20mA current loop, use the 12 Vdc output to feed the 4-20mA device
0-10V	Connect a 0-10Vdc signal.

miniDM Analogue Outputs

	0 to 10 Volts DC or 4-20mA. (Selected in the properties box of the output block) Note 1: The 4-20mA output will not operate correctly if the target device input impedance is > 75Ω Note 2: The 0-10V output will not operate correctly if the target device input impedance is < 10KΩ A 50mA fuse is recommended for this output.

Note: The use of centre tapped to earth transformers is not allowed. This is to prevent damage to the transformer and/or controller.

The host equipment must provide adequate protection against contact to hazardous live parts.

RDM advise the use of a suitable external over-current protection on the Controller.

Warranty may be invalidated due to excess current being unlimited if there are no fuses/circuit breakers installed on the Plant Controller.

Relays

	DMTouch
Fixed on-board relays	7.5A resistive load 250Vac COSϕ=0.4 5A inductive load 250Vac

	miniDM
Mechanical Relay	
Max current	10A Resistive (CosØ = 1) 5A Inductive (CosØ = 0.4)
Max voltage	250Vac. 24Vdc
Relay Spacing	Relays 1-5 allow the use of mains or low voltage on any relay.
Solid State Relay (SSR)	
Max Current	1Arms (1A Fuse if Applicable)
Voltage	12-280Vac only, will not switch dc
Safety	Conforms to EN60730-1 based on UL 60950-1; UL 62368-1 as referenced to IEC60730-1

Note for DMTouch, all relays are independent and can operate at different potentials to the supply voltage. For compliance with the Low Voltage Directive (LVD) relay 2, 3 & 4 must be at the same voltage potential.

miniDM PWM Specification

Frequency Range	0.016667Hz – 20kHz
Pulse Period Limits	Minimum 50µs (0.00005s) Maximum 60s
Period Resolution	10µs
Duty Cycle Range	0 – 100%
Voltage with Internal Pull-Up Enabled	High-Level Output Voltage: Typical 4.7V ± 200mV (recommended minimum 10kΩ load impedance)
Voltage with Internal Pull-Up Disabled	External Voltage Range: 1V – 30V DC Maximum Current Sinking: 75mA

For duty cycle tolerance see Appendix 9.

Note: The PWM outputs have an internal pull-up resistor that can be enabled/disabled through software. This allows the controller to output its own voltage signal or function as an Open Collector output to modulate an external voltage source. Each PWM channel is configured separately.

miniDM Fuse Requirements

	DMTouch
Supply Fuse	Built in fuse holder, fuse 2A 240Vac Ant surge (T) HRC conforming to IEC60127, 32 x 6.3mm
Or MCB	2A, 240 VAC Type D conforming to BS EN 60898 (Note: controller has integral 2A fuse)

miniDM Power Supply Unit: PR0625

PR0625 is a Meanwell 24V 2.5A Din Mountable Power Supply Unit (Model DR-60-24) used with the controller. The user document for DR-60-24 can be found under Support on the RDM website.

Software, Software drivers and software features and function licenses

RDM product Software Licences and drivers are none transferable. They are purchased with hardware or separately and once added to hardware for use on that hardware only. If hardware is returned and deemed out of warranty all software driver licenses terminate with the hardware.

Change History

Date	Version	Update No	Changes
22/10/2013	2.0		First Release.
27/11/2013	2.0.1	01	3G Dongle support added.
		02	If alarm log is cleared an alarm is generated.
		03	Network Statistics information added.
06/12/2013	2.0.2		3G Modem information amended.
28/01/2014	2.0.3	01	Enhanced BACnet support added.
		02	New auto split feature added.
		03	Night Blinds threshold support.
		04	USB menu support added.
06/02/2014	2.0.4		TDB Lite amended from a maximum of 40 blocks to 100 blocks.
27/03/2014	2.0.5	01	Notepad feature added.
		02	Device summary chart.
		03	USB analogue modem support added.
		04	User elevations.
		05	TLS mail support added.
07/04/2014	2.0.6		Enhancements to Swipe System (Active FM Only).
24/04/2014	2.0.7	01	Added TPI support for client specific OEM Brooklands controller.
		02	Enhanced Minitype for split controllers using night blinds.
		03	Enhancement to BACNET Interface to prevent devices logging on which have no name or description.
23/06/2014	2.0.8		Support added that if the RCS gateway comes back with no values in a controller, it will not create a type file.
11/09/2014	2.1	01	Added features for graphs including quick view graphs from device list and dynamic real time graphs are available.
		02	TPI summary chart and alarm comments using keypad / display added.
		03	Internal file compression re-structuring.
06/03/2015	2.1.1		Note to confirm binary tdb format is required if using the feature Mercury TDB upload.
16/06/2015	2.2	01	New settings for night blind monitoring.
		02	Improved viewing for layouts.
		03	Added 'Send All Alarms' function for alarm monitoring centres.
		04	Allows you to modify the parameters of a CPT type, via TDB.
		05	Updated Modbus energy meters table.
18/08/2015	2.2.2		Description of dynamic real time graphing updated.
10/09/2015	2.2.2a		Modern Look interface updated in all images.
30/09/2015	2.2.2b		Description of Advanced Night Blinds amended.
15/10/2015	2.2.3		Internal changes for multiple CPUs.
02/05/2016	2.3	01	Console compatibility for Touch XL Orbit.
		02	Manage layouts feature.
		03	Enhanced graphing interaction with export option.
		04	Graph can scale height of digital inputs when displayed along with analogue inputs.
		05	New Dark theme.
		06	Support for Canbus interface.
		07	Individual device night blind alarms.
		08	Smart parameter setting which enables bulk parameters to be set on different device types.
		09	System log search.
		10	Edit tags feature.
		11	Updated temperature performance setup.
		12	Enhanced split update.
		13	Edit split option.
		14	Device profile graphs.
		15	Document manager.
		16	Energy monitoring feature.
		17	Plant/ mercury TDB backup feature.
		18	SSL encrypted access.
22/06/2016	2.3.2	01	Updated export log data description to include sampling time.
		02	Updated Intelligent Load Shedding setup description.
		03	Note added to item visibility
15/08/2016	2.3.3	01	Enhancements to split devices
		02	Confirmation of maximum number of bits Modbus type files can read.
19/10/2016	2.3.4	01	Captcha tests for saving site setup

26/10/2016	2.4	01	RDM-485 interface
		02	Advanced Night Blind History graphs
		03	Individual Defrost Warning numbers per case
		04	New TDB Pump Block
		05	New TDB custom units support
		06	New mini-IO expansion board support
		07	Merge Device feature
		08	Custom automatic export
		09	Philips Envision Lighting support
		10	Device descriptions in Alarm Entry Details
		11	Add support for URL rather than just IP addresses in auto export
		12	Modbus 64-bit input support added
		13	Mimic tags updated.
		14	Code optimisation
		15	Updated Drivers
1/11/2016	2.4a	01	Added to ECA Energy Technology List.
7/11/2016	2.4.1	01	Updated defrost warning page.
02/12/2016	2.4.2	01	Amendment to Service Menu aliases
		02	Defrost Timer Device Setup description updated
13/12/2016	2.4.2a	01	Defrost Termination feature
20/01/2017	2.4.2b	01	DMTouch reset button explanation added
25/01/2017	2.4.2c	01	Site setup description updated.
31/01/2017	2.4.2d	01	Coefficient of performance Section Added (CoP)
20/02/2017	2.5.0	01	Support for Superpack item aliases to be inherited by the DMTouch
		02	Modem setup requires Site ID and description to be setup before dial out
		03	Support for HTTPS posting of automatic exports
		04	Added to Auto and manual exports – alarm slave aliases
		05	Defrost termination button were supported
		06	Graphing has option to show device ID and description in device selection
		07	Ability to set the visibility of shared parameter names across different types.
		08	Removed Original web theme
		09	BACnet overrides permitted in split devices
		10	New TDB block support – String Input
		11	Support for RDM-485 networking
		12	Type Editor feature
		13	Extension board status menu
		14	Include device description in alarm log entries.
		15	Removed self-extracting option for data exports
		16	New Disciplines feature
		17	Add support for automatic certificates from Let’s Encrypt
		18	Enhancements to layout functionality.
15/03/2017	2.5.1	01	Enhancement to interface when viewed by a mobile device
		02	Improvement made to split device functionality
		03	Modern webpage looks as set as default
		04	Enhancements to layout functionality
		05	TPI – Support for dual temp feature on RDM Circuit Controller
		06	New BACnet pending feature.
02/10/2017	2.6.0	01	Added separate web services CGI.
		02	Support added for Superpack alarm aliasing inheritance.
		03	Enhanced auto-export checks so exported device matches current type file.
		04	Circuit controller auto-split feature.
		05	Enhancements to Layouts supporting Superpack aliases.
		06	Enhancement to TDB network output block to permit the use of wildcard entries.
		07	Support for Layout background colours.
		08	Site configuration saves provides option to include layouts.
		09	GP Run On limit increase.
		10	System configuration saves BACnet /RDM-485 user-set types (used with BACnet/RDM–485 pending).
		11	Support added for user generated type files to be used with Modbus/ IP.
		12	Support added to allow alarms in user generated type files.
		13	Support added for AK SC255, SC355 and AK SM800.
		14	Enhancements to reading alarm database on CGI.

		15	Improvements to discipline feature in "standard look".
		16	Improvements to text handling for old style layout files.
		17	Graphs will now take into account of visibility.
		18	Support added to reset an RDM controller remotely.
		19	Enhancement to interface when viewed by a mobile device.
		20	Improvement to custom Automatic export supporting item aliases.
		21	Improvements to Philips Envision Lighting support.
		22	Option added to remove layout when doing a save site configuration.
		23	New Broadcast receive list feature.
		24	TDB Editor – drop down menus when using network blocks.
		25	TDB Editor – New blocks – Analogue Sensor, DOF2, ROF2, DPID2, RPID2, Occupation 2, P2T2.
		26	TDB Editor – update to Pump block to ignore run proofs.
		27	TDB Editor – Analogue Input block with automatic defining of values.
		28	TDB Editor – Light Sensor option in Analogue input block.
		29	TDB Editor – Support added for 4Uni 4Relay expansion module.
		30	New Layout feature incorporating GP Overrides.
		31	New Layout feature allowing slide mimic, states, overrides and GP run on.
16/10/2017	2.6.0a	01	Surge Protection Note added
26/10/2017	2.6.1	01	Added support for BACnet Accumulator object.
		02	Enhancements to handling of bigger BACnet devices.
27/11/2017	2.6.2	01	Improved support when using old browsers to access DMT
		02	Enhancements to loading Genus's type files
		03	Support added for Wi-Fi adaptor.
		04	Added export log enhancement to allow export in current 30-minute cycle.
06/12/2017	2.6.3	01	Enhancements to setting multiple devices
15/01/2018	2.6.4	01	New Enhanced web services functions; GetDevices; SetDevices; SetDeviceName; SetDeviceAliases; SetItemAliases.
		02	Update to BACnet accumulator object
		03	Enhancements to handling blank Bacnet digital objects
		04	Support added to allow scan over LONworks network
08/02/2018	2.6.5	01	Optimisation of memory allocation when using TDB blocks
		02	Support added to Visibility page to grey out items automatically hidden by the DM.
07/03/2018	2.6.5a	01	Added BACnet Type section
30/03/2018	2.6.6	01	Fix to memory leak if auto-split feature is used with Circuit Controller or New Superpack.
26/04/2018	2.7.0	01	Enhancements to Modbus driver
		02	Updates to BACnet interface
		03	Increase protection to exports when null characters used in devices.
13/06/2018	2.7.0a	01	Note added under split device menu
26/09/2018	2.7.0b	01	Note added on site configurations
30/11/2018	2.7.0c	01	Update to Night blind description
07/12/2018	2.7.0d	01	Update to GP Timer description
		02	Update to US Group Office address
08/02/2019	2.7.1	01	Enhanced XLON support
19/02/2019	2.7.2	01	Force CGI login page will now remove logos and site information when viewing.
		02	Unable to remove and add expiry to last install user.
		03	Add new local / remote user checking to second web port
		04	Web Services to follow Force CGI Login checkbox
		05	User account disabled for 1 hr after 5 failed login attempts.
		06	Removed the ability for Install, service and store to login remotely if set as default.
05/03/2019	3.0.0	01	New Look of DMTouch
		02	Expanded detail within system log to show which user makes changes
		03	Expanded detail of changes to Alarm actions within system log
		04	Ability to edit previously set up Automatic Exports
		05	COP using Deg F and psi
		06	New DMTouch Start-up Wizard
		07	Ability to export data at 15seconds if available
		08	Enhancements to Layouts
		09	New HVAC or Refrigeration Versions
		10	Enhancements to setting multiple parameters on multiple devices
		11	Enhanced Notepad features and logging in system log
		12	Enhancements to alias inheritance from TDB, Pack or Circuit devices

		13	Enhancements to splitting devices
		14	Improvements to TDB alarm aliasing
		15	New Graphs
		16	New Authentication setup feature
		17	New User lockout on repeated retries
		18	New multi-watch discipline tab
		19	New Watch tab in devices
		20	New Light and Dark themes configurable to preference on any device
		21	New Custom Home Screen
		22	Menu layout and themes
		23	Enhanced support added for XLON
		24	Separate device CPT page
		25	Advanced CSR generation for SSL
		26	New Digital signature on exported data option
		27	New LON Network protocol
		28	Enhancements to handle larger numbers
		29	Updates to all template directories
		30	BACnet aliasing update in pending
25/04/2019	3.0.1	01	Update to confirm supported tls version
		02	Specification section updated for display
10/03/2020	3.1.0	01	Introduction of RDM's Wireless Bluetooth mesh
		02	Add MQTT support and MQTT set up page
		03	Add multiple pages to Custom Homepage
		04	Add new custom mimics
		05	Gauge & Bar widget colour band selection simplified
		06	Disciplines – Auto Populate by Pack
		07	New Web Services function to allow setting parameters for a specific period of time
		08	New Web Services function to amend device names and aliases
		09	Layouts or Mimics inheritance from Plant TDB devices
		10	Auto-population of mimics
		11	New Custom Mimics
		12	New Recovery mode
		13	Energy Monitor for up to 6 sources
		14	New Expansion board added
		15	Selectable periods for Watch/Multi-watch & Summary graphs
		16	Enhancements to device list 'pop-up' graphs
		17	Enhancements to TPI performance 'pop-up' graphs
		18	Ability for install level users to unlock a 'locked' user
		19	Add support for sending alarms using https
		20	Enhanced security for securely logging into a DMTouch via a web interface
		21	Restrict users to 'local access' only
		22	Added checks for private / public key matching for uploaded certificates
		23	MAC address added to device info page
		24	Add support for Comtrol protocol and their 3rd party boards
		25	Include DMTouch network settings in system dump
		26	Added RDM single phase Energy meter
		27	Added functionality to Notepad feature
		28	Type Editor for Modbus: Add command support
		29	State Strings pulled through to Device list
		30	Enhanced System log entries for Time changes
		31	Simplified multi-watch setup
		32	Added Distributer diagnostics functions
		33	Let's Encrypt support updated to use ACME V2 of protocol.
		34	Broadcast Receive List – Main body of page was blank if there are no received items.
		35	New Site configurations not backwards compatible
		36	Staggering start times for night blind calculation
		37	Nw Errors page will show hidden controllers as well
		38	Last DMTouch version to support the old-style Orbit 2/3
		39	Added protection against accidental Control State category matching incorrect state
		40	Use USA date format if panel is set to English (US) on graphs.
		41	Invalid PINs caused all users to get locked out of PIN login via Front Panel.
		42	Change to allow the TPI to be calculated if the controller had no state

		43	Increase length of timeout when waiting for plant controller upload reply.
		44	Set Shared Params (multiple devices) Add notice explaining this will set all values.
		45	NTP/Set time for any large time diff change, reset the NTP check interval down to an hour.
		46	Change checkboxes in Modbus Type Editor to same style as rest of DMTouch user interface.
		47	Within the Set Multiple Parameters feature, when selecting the items, it use to shows all the items for the device even though they've been hidden via visibility – they are now hidden.
		48	TDB Network Analog Input block scaling change to handle hrs:min.
		49	In Item Matching allow only 3 control values to be set up.
		50	Device Values page speed increased
		51	Alarm Reports – List of alarms – Message now added if no alarms
		52	Wizard – If uploading config into start-up wizard and it's the front panel and there's no users file, then don't require a password.
		53	Improve for zoom operation when changing between "Absolute" and "Differential"
		54	Mercury TDB Feature – supports new Intuitive Mercury TDB Hardware.
		55	Enhancement to Custom page widgets to handle change of item
		56	Problem if a controller type has multiple controllers some with mini type on and some with it off
		57	Multi-watch now accounts for items which have been aliased within a device.
		58	Multi-watch – General improvements
		59	Set Time page: Indicates the current time zone set in the DMTouch
		60	Force CGI login page: Display time zone.
		61	Site setup – Changes are now more explicit in the system log.
		62	If TPI Performance values are up-to-date and valid, before power cycle, the DMTouch will load up last stored value on a restart.
		63	Improve scrolling – General enhancements for certain web browsers.
		64	Improvement to digital value identification on graphs.
		65	Improvement to large Units name/description in TDB
		66	TPI now available when a DMTouch is set to HVAC for AC systems.
		67	Auto Export/Export Log used on DMTouch front screen can now add individual controllers.
		68	In some instances, the DM would reset when the user tried to save a file from the Type Editor.
		69	Updated time zone files
		70	Alarm log 'Infinite' scrolling and rework of alarm comments feature.
		71	Syslog Start date selection option and 'infinite' scrolling added.
		72	Set Shared Parameters – Removed the column "Set All".
		73	Factory defaults page appearance Improvement when viewed from front panel.
		74	Item Visibility improvements when setting params on multiple devices
		75	Improve layout to make better use of the full width of the available area
		76	Improved filter operation on alarm page.
		77	Improved slide handling and discrimination between layout slide and mimic layout slide
		78	Enhancements to the Slide block when used within a Layout.
		79	Listed tables can now be sorted by time
		80	Unchecking alarms (to disable) during split, is now saved
		81	Allow user to remove a name of a device, reverting it back to default e.g. 3 rotary switches.
		82	Hardware I/O setup now removes Span field when set to probe input.
		83	Changed Alarm Alias and Item Alias pages to allow device with underscore in the name.
		84	In Device List; States, TPI and Valve performance now updated more regularly.
		85	Left-hand toolbar improvement for ie11.
		86	Device list performance improvements to scrolling and user interaction.
		87	Allows web services Get Slave to see item if items are hidden.
		88	Change to add more than 32 Carel controllers – increased to 64.
		89	Mercury TDB upload change to condition where it only had write password, but now has read password.
16/03/2020	3.1.0B	01	Updated related part numbers
20/07/2020	3.1.0C	01	Update to user lockout note.

16/09/2020	3.2	01	Support added for RDM Bluetooth.
19/05/2021	4.0	01	Support added for miniDM
		02	Added non-Java TDB Editor
		03	Added Lua programmable bloc
		04	Period option added within GP Timer
		05	Export/Automatic export of alarm log
		06	Export/Automatic export of system log
		07	Device List: Filter and search function added
		08	Daylight block performance enhancements
		09	Turns top banner orange if lost comms with DM
		10	Default parameters support
		11	Mini I/O and Stepper I/O board support
		12	Config Upload: Display what features need to be turned on for the config vs the panel
		13	Plant and Mercury TDB upload: Will only list devices which are online
		14	Set timed parameters user interface added
		15	Save log file every 15 secs
		16	MQTT Setup: Drop down menus added for the device and item
		17	Graph: On the select calendar, USA week to start with Sunday
		18	Ability to set device item visibility via RDM Web Services
		19	GP Timer: Wizard changes, slider changes, "Remove" and "Remove All" will save automatically
		20	Modem setup and Auto Export: Number/URL max length increased to 1024. Multiple mail recipients.
		21	TDB: Implement Offline block to indicate if CAN expansion boards are offline
		22	Set Alarm Indexes to include user name in log entry
		23	Parameters history page now defaults to showing active/pending only.
		24	Alarms Report: Now shows most recent at the top
		25	Device List: Click on headings to change sort order
		26	Webservices: Option added to exempt WSDL request from forced login
		27	RDM WebServices: SetDeviceCPT – Now allows CPT to be set if device is present but offline.
21/05/2021	4.0b	01	Note added for miniDM screen and miniDM picture updated.
09/06/2021	4.0.2	01	Enhancements made to Multi Watch tab. Note added regarding number of items selected and logging period.
17/06/2021	4.0.3	01	Improvement made to layout compatibilities via front display.
02/07/2021	4.0.4	01	Added Extension boards to Local I/O menu.
10/08/2021	4.0.5	01	Support added for miniDM
		02	Enhanced layout functionality when using Network Items and 2- or 3-way blocks.
		03	Improved functionality when downloading TDB files.
16/09/2021	4.0.5a	01	miniDM specification updated.
30/09/2021	4.0.5b	01	Information added for using TDB to read in and control network devices.
29/11/2021	4.1	01	miniDM: LCD display support.
		02	Modbus type writer test tool.
		03	Micro Thermo Import tool.
		04	Modbus IP port can now be specified.
		05	System lockout by Webservices.
		06	Energy Mon: "Consumption" name can now be changed.
		07	Improvements made to export log when changing type numbers.
		08	Alarm log infinite scroll: Can now go back as far as there are logs.
		09	Enhancements made to system log when using night blinds feature.
		10	Support added for TDB drop list block.
		11	Local I/O Input Setup: Add 'ppm' option.
		12	Added option to include the Parameter History log in the System log.
		13	Clear Active Alarms feature added.
		14	Limit built-in display screen off time to a max of 30 mins – miniDM.
09/06/2022	4.1.1	01	Support added TLS 1.2
		02	Export log data now has option to extract logs in 30 minutes increments.
		03	Option added to allow selection of which Web Services version to use.
		04	Enhanced support added for XLON
06/09/2022	4.1.1a	01	Appendix 10 added; System Dump using Windows 11.
14/09/2022	4.1.2	01	Improvements made to CAN expansion boards for miniDM.
		02	Enhancements made to layout functionality.
		03	Improved TPI for multi section controllers.

21/09/2022	4.1.2a	01	Note added for layout size on miniDM
30/09/2022	4.1.2b	01	Note added regarding termination resistors on Modbus adapter
11/11/2022	4.1.2c	01	Note added regarding USB Fibre adapter and User list limit
15/03/2023	4.2	01	BACnet can now operate as a BACnet server. (Initial support)
		02	Added multi-factor authentication (MFA) security to the DMTouch.
		03	Alarm actions can now be named.
		04	Reports options now includes alarm actions.
		05	Improvements made to handling of Intuitive Plant Slider, Override and Three-way mimics
		06	Modbus test tool: Added support to define a port number if it's an IP interface.
		07	Type Editor now has the ability for States to be added to the Modbus template.
		08	Support added for Air Quality Sensor.
		09	Network devices and items in TDB Editor will auto populate in drop down boxes.
		10	Improvements made to Energy Mon feature.
		11	Support added for the PR0496-4G (DMTouch only)
		12	Left & right arrows added to the Custom Home Page for easier navigation.
		13	New button added in GPTimer & GPTimer Report page which allows programmed only channels to be displayed.
		14	12-hour period option added on the Device page summary graph.
		15	GP timer channels support increased to 100.
		16	When an alarm is generated on the FP, the Device Description will also be shown.
		17	Enhancements made to item aliasing when using a Super Pack.
01/06/2023	4.2.1	01	Support added for IEEE802.1 Authentication.
		02	Added GP Timer 2 Block.
		03	Improvements made to alarm aliasing when using mini types.
		04	Support added for Stepper Auto Close (PR0653).
15/06/2023	4.2.2	01	Improvements made to timed parameters feature.
20/09/2023	4.2.3	01	Improvements made to shared and timed parameters.
23/11/2023	4.2.3	a	Note added regarding usage of multiple email addresses
18/03/2024	4.3	01	Refrigeration Performance Indicator feature added.
		02	Support added for CDK.
		03	SSL updated to allow private keys to be uploaded.
		04	New TDB editor – Allows typing of device and item names.
		05	Improved handling of locked parameters when using Web Services and shared parameter feature.
		06	Support added to allow Mercury password changes.
		07	Improved handling when using 20 Widgets.
		08	Support added for 3rd party leak detectors.
22/05/2024	4.3.1	01	TouchXL Orbit support added to the miniDM.
		02	Improvements made to TPI working with the 3EC controller
		03	Improvements made to the handling of large layouts.
08/11/2024	4.3.2	01	RDM Override feature added.
		02	Repeat alarm option added.
		03	Alarm duration information added to the alarm log.
		04	Option to filter alarms lasting over 60 minutes.
		05	Log thin age (days) min changed to 10.
26/03/2025	4.3.3	01	Enhanced BACnet pending section with the ability to mark items as "Unused".
		02	Added support for the new Lon adapter.
		03	Introduced offset support for controllers with more than 8 probes.
		04	Added a search function within graphing on the DM Touch.
		05	Manual export option for system log added.
		06	miniDM - Optimisation of memory allocation.
		07	Added additional periodic MQTT settings.
		08	Added options for the MQTT for the minimum update time and retain option.
		09	Adding new gases for COP support for the US.
22/08/2025	4.3.4	01	Added support for changing network interface names.
		02	Improvements made to BACnet Server handling.
		03	Improvements made to Web interface page response.
		04	Improvements made to Pack Recovery speed.
		05	Improvements to Export Log Data functionality.
		06	Improved compatibility with mini expansion boards when using TDB.

24/11/2025	4.3.6	01	Improvements have been made to the handling of replaced XLON adaptors.
06/02/2025	4.3.6a	02	Added note regarding importing mimics and Layouts from Intuitive Plant controllers.
24/02/2026	4.3.7	01	Support added SHA256 for Enhanced Web Services authentication.

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