industry.AI | BLP Group Company

Conserve.AI

User Manual

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1. Introduction

1.1 Purpose

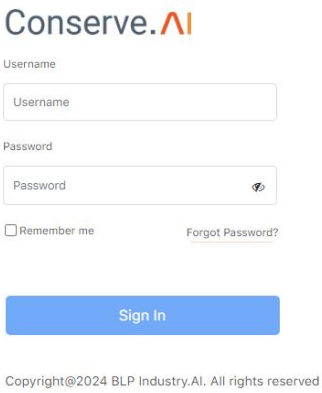
This document aims to explain the operational procedure for using the web-based Conserve.AI Monitoring System. It also describes the features of the Energy Management system.

1.2 Scope

The scope of this document covers:

- Explaining the features of the Conserve.AI Application.
- Describing the activities of users.

2. Login

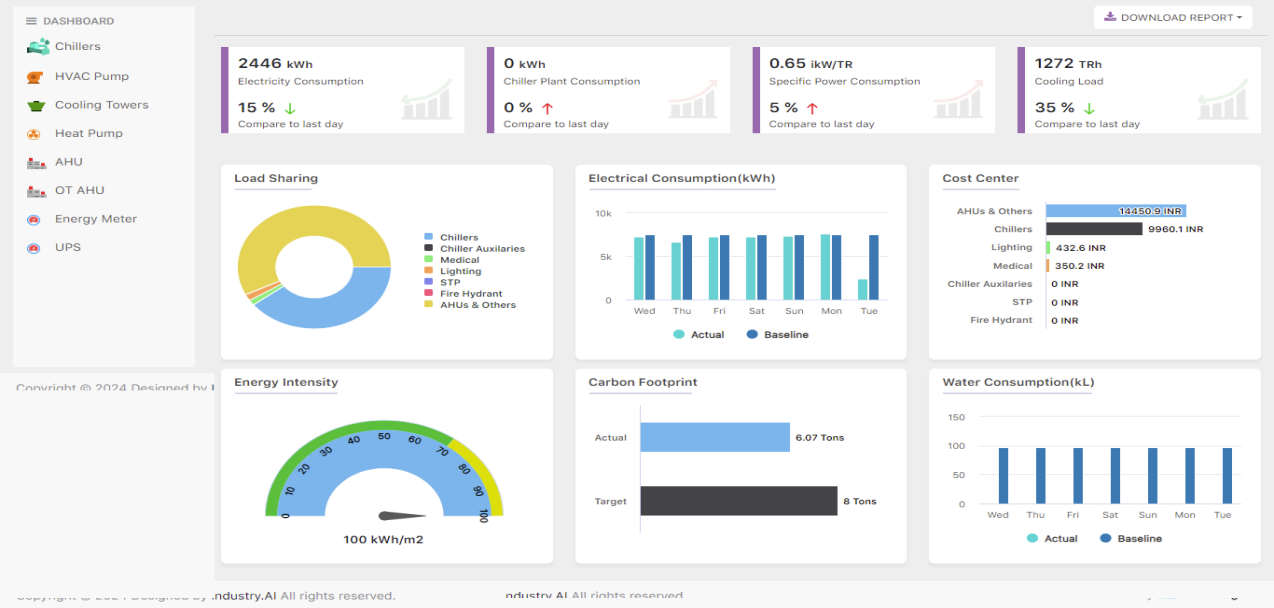


Steps to Login

1. **Enter URL**:
   - Open a web browser and enter the URL.
2. **Enter Credentials**:
   - Enter your username in the 'User Name' field.
   - Enter your password in the 'Password' field.
3. **Remember Me**:
   - Check the "Remember me" checkbox if you want the browser to remember your credentials for future logins. This will allow the website homepage to load directly next time.
   - If you do not check the "Remember me" checkbox, the browser will not remember your credentials, and you will be prompted to log in again next time.

4. **Forget Password**:
    - If you forget your password, click on the "Forget password" link. This functionality allows you to reset your password by following the instructions provided.
    - Click on forget password, and it will redirect to one more screen.
    - Enter the email in the email field.
    - Click submit.
    - The reset password link will come to the mail. Using that, reset the password.
5. **Sign In**:
    - Click on the "Sign In" button. Upon successful login, you will be redirected to the portfolio page.

Portfolio



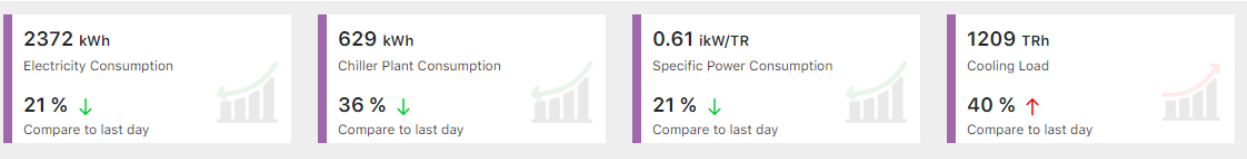
The "Portfolio" page provides a comprehensive overview of various energy and resource consumption metrics, along with navigational options for accessing different features of the Conserve.AI Monitoring System.

Navigation Bars

At the top of the "Portfolio" page, users can see navigation bars for the following sections:

- Portfolio
- Load Profile
- Alerts
- Compare
- Configuration
- Analytics
- User Management
- AI Insights

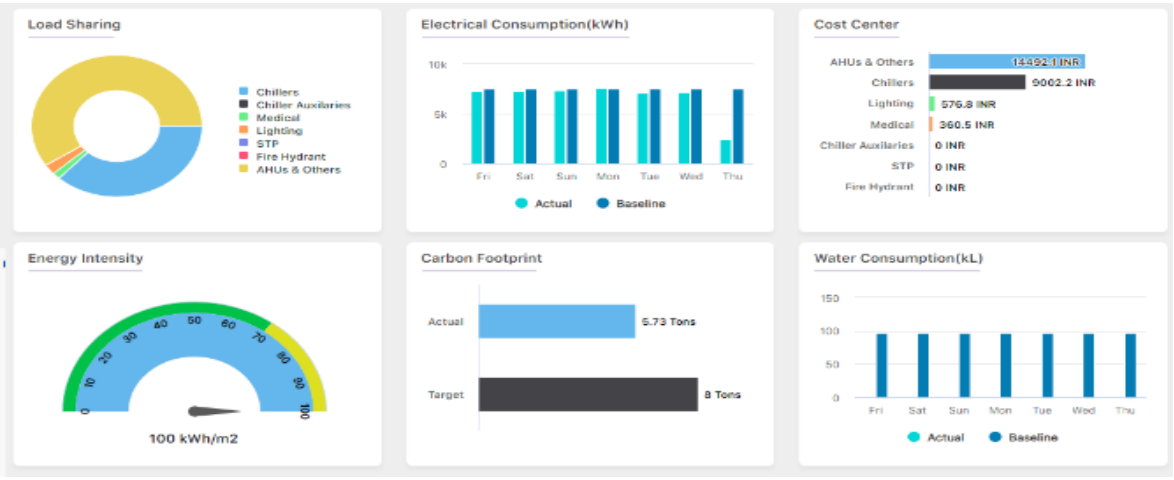
Top Four Cards



The top four cards on the "Portfolio" page represent the following metrics for today's consumption compared to the previous day:

1. **Today's Energy Consumption**:
    - Shows today's total energy consumption.
    - Compares to the previous day's consumption percentage.
    - Green arrow indicates lower consumption than yesterday.
    - Red arrow indicates higher consumption than yesterday.
2. **Chiller Plant Consumption**:
    - Displays the energy consumption of the chiller plant for today.
    - Compares to the previous day's consumption percentage.
    - Green arrow indicates lower consumption than yesterday.
    - Red arrow indicates higher consumption than yesterday.
3. **SPC (Specific Power Consumption)**:
    - Indicates the specific power consumption for today.
    - Compares to the previous day's consumption percentage.
    - Green arrow indicates lower consumption than yesterday.
    - Red arrow indicates higher consumption than yesterday.
4. **Cooling Load**:
    - Shows today's cooling load.
    - Compares to the previous day's consumption percentage.
    - Green arrow indicates lower consumption than yesterday.
    - Red arrow indicates higher consumption than yesterday.

Charts and Metrics



1. **Load Sharing Chart**:
    - Displays the energy consumption of different departments.
    - Helps in understanding which departments are consuming the most energy.
2. **Electrical Consumption Chart**:
    - Shows the electrical consumption over the last seven days.
    - Includes a baseline for comparison.
3. **Cost Center**:
    - Displays energy consumption costs by department.
    - Calculation formula: Consumption * 10.3
4. **Energy Intensity (EUI)**:
    - Measures how much energy the hospital uses relative to its floor area or bed-days.
    - Calculation: Total energy consumption divided by an organization-specific metric.
    - Unit: Watt per square meter
5. **Carbon Footprint**:
    - Shows actual and target values of carbon emissions.
    - Helps in monitoring and reducing the hospital's carbon footprint.
6. **Water Consumption (KL)**:
    - Displays water consumption over the last seven days.
    - Includes actual and baseline values for comparison

Load Profile

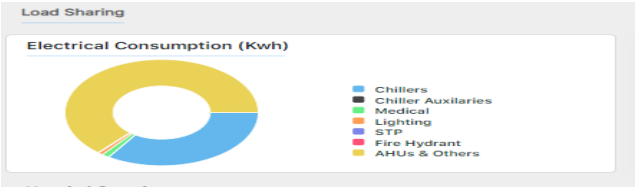
When the user clicks on "Load Profile" in the navigation bar, they will be redirected to the Load Profile page. This page provides detailed information on various departments and their energy consumption metrics.

Page Overview

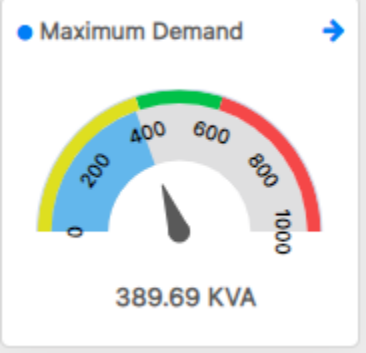
Upon accessing the Load Profile page, the user will see multiple departments with their respective values and charts.

Sections and Metrics

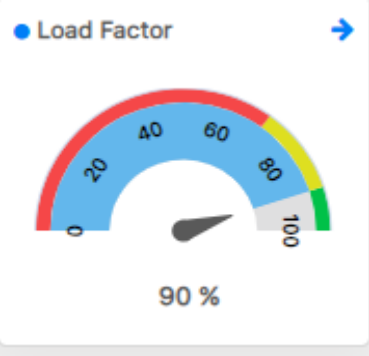
1. **Load Sharing Department**:
    - Displays department-wise energy consumption.
    - Helps users understand the energy distribution among different departments.
2. **Electrical Consumption Chart**:
    - Shows the energy consumption of each department.
    - Helps in visualizing and comparing consumption across departments.



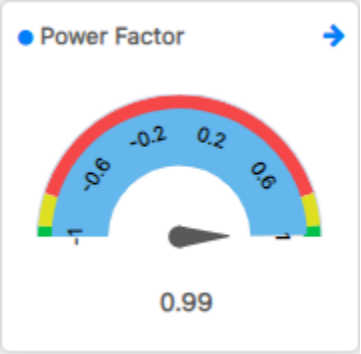
3. **Maximum Demand Meter**:
    - Represents the maximum demand of the main meter.
    - **Formula**: Maximum Demand = Live Active Power / Power Factor



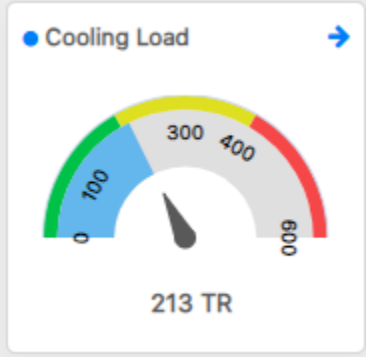
4. **Load Factor**:
    - Represents the load factor of the main meter.
    - **Formula**: Load Factor = (Active Power / Peak Maximum Demand) * 100



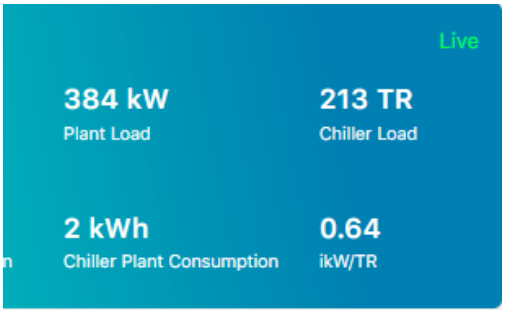
5. **Power Factor (PF)**:
    - Displays the power factor of the main meter.
    - **Value**: Live



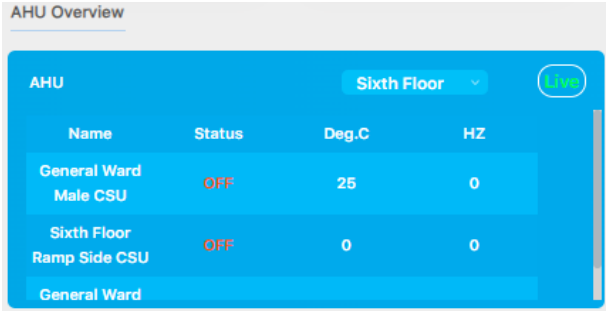
6. **Cooling Load (TR)**:
    - Represents the cooling load of the chiller.
    - **Value**: TR of the chillers



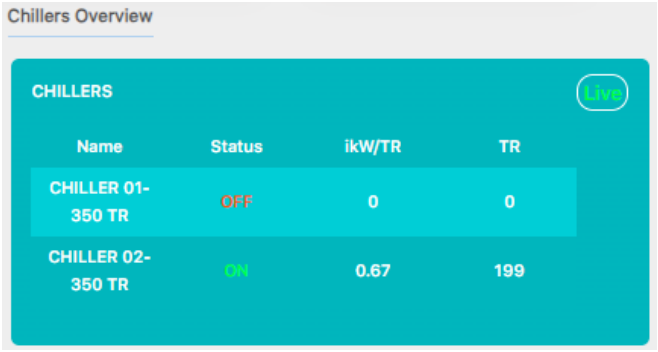
7. **Overview**:
    - Displays an overview of the energy metrics, including:
        - Plant Load
        - Chiller Load
        - Energy Consumption
        - Chiller Plant Consumption
        - Specific Power Consumption (SPC)



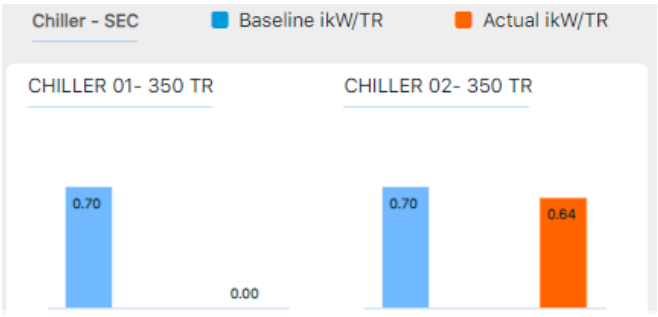
8. **AHU (Air Handling Units)**:
    - Displays the floor-wise AHU status, including:
        - On/Off status
        - Temperature
        - Frequency



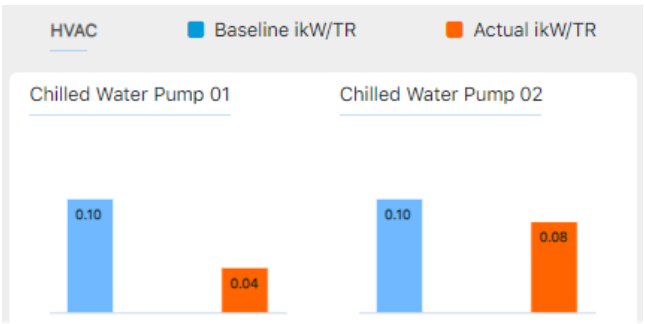
9. **Chillers**:
    - Displays the status of chillers, including:
        - Chiller Status
        - Specific Power Consumption (SPC)
        - Load



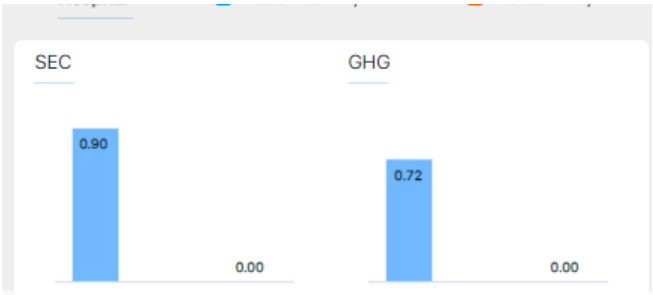
10. **Chiller SEC (Specific Energy Consumption)**:
    - Displays the actual and baseline SPC for chillers.
    - Helps in monitoring and optimizing chiller performance.



11. **HVAC (Heating, Ventilation, and Air Conditioning)**:
    - Displays the actual and baseline SPC for pumps.
    - Helps in assessing and improving HVAC efficiency.



12. **SEC & GHG**:
    - Displays the actual and baseline values for:
        - Specific Energy Consumption (SEC)
        - Greenhouse Gas (GHG) emissions



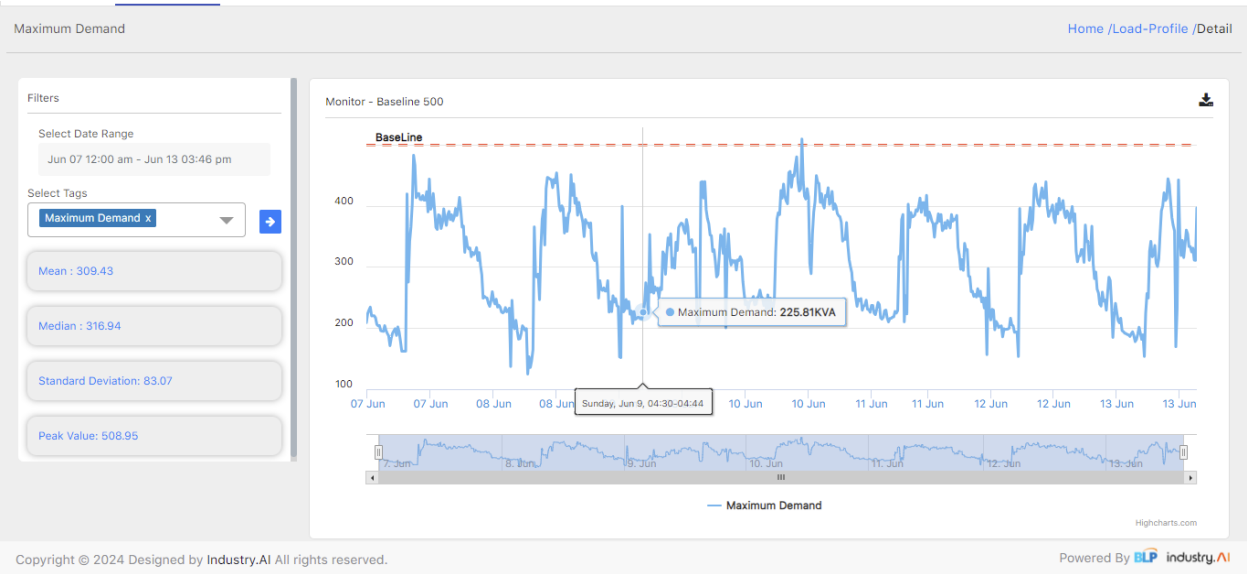
Maximum Demand, Load Factor, Power Factor, and Cooling Load

In the Load Profile page, the sections for Maximum Demand, Load Factor, Power Factor, and Cooling Load have arrow icons. Clicking these arrows will redirect users to the detailed pages for each metric.

Detailed Pages Overview

Navigation

1. **Maximum Demand**
2. **Load Factor**
3. **Power Factor**
4. **Cooling Load**

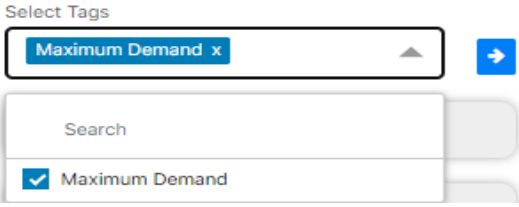


Each detailed page includes:

1. **Filter Department**:
    - Allows users to filter data by department.
    - Provides options to select a date range using a date picker.
2. **Date Picker**:
    - Users can click on the date picker to select the desired date range.
    - The default view shows data for the last seven days.
    - The graph updates based on the selected date range.

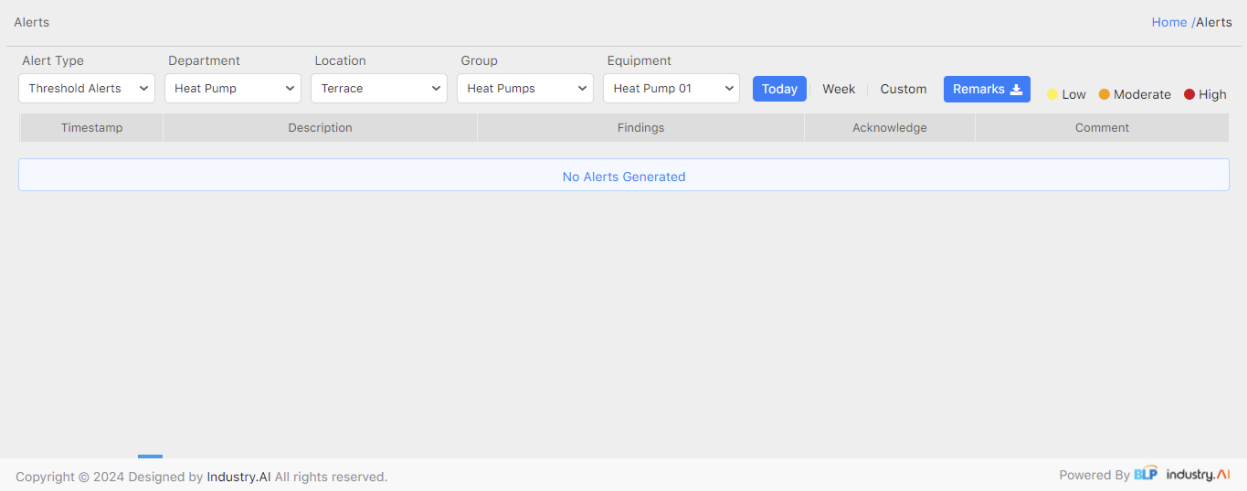
3. **Statistical Metrics**:
    - **Mean**: Shows the average value of the selected metric.
    - **Median**: Displays the middle value of the data set.
    - **Standard Deviation**: Indicates the variability or dispersion of the data.

4. **Graph**:
    - Displays data for the selected metric.
    - Updates based on the chosen date range and filter tags.
    - Initially shows data for the last seven days by default.
5. **Filter Tags**:
    - Users can select tags to filter the data further.
    - The graph will update based on the selected tags.



6. **Download Data**:
    - A download icon allows users to export the data.
    - Data can be downloaded in CSV format for further analysis.

5.Alerts



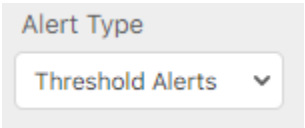
The Alerts page allows users to monitor and manage various alerts based on different criteria. Users can filter alerts, acknowledge them, add comments, and download reports.

Page Overview

Upon accessing the Alerts page, users will see multiple dropdowns, date selection options, and a Remarks button for downloading reports.

Dropdown Filters

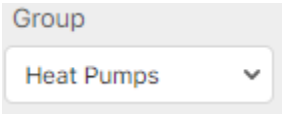
1. **Alert Type Dropdown**:
    - Select the type of alert you want to view.



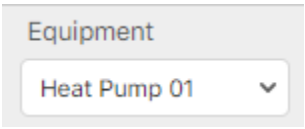
2. **Department Dropdown**:
    - Select the department whose alerts you want to filter.

3. **Location Dropdown**:
    - Choose the location for which you want to see alerts.

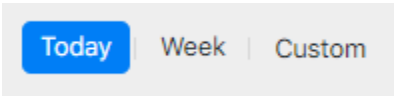
4. **Group Dropdown**:
    - Select the group whose alerts you want to view.



5. **Equipment Dropdown**:
    - Choose the equipment for which you want to see alerts.



Date Selection Options



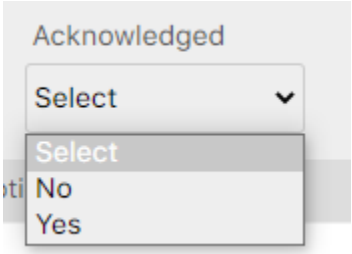
- **Today's Alerts**:
    - By default, the Alerts page displays today's alerts.
- **Last Seven Days**:
    - Click on the "Week" option to display alerts from the last seven days.
- **Custom Dates**:
    - Select "Custom Dates" to specify a custom date range. The alerts will be filtered and displayed based on your date selection.

Alerts Table

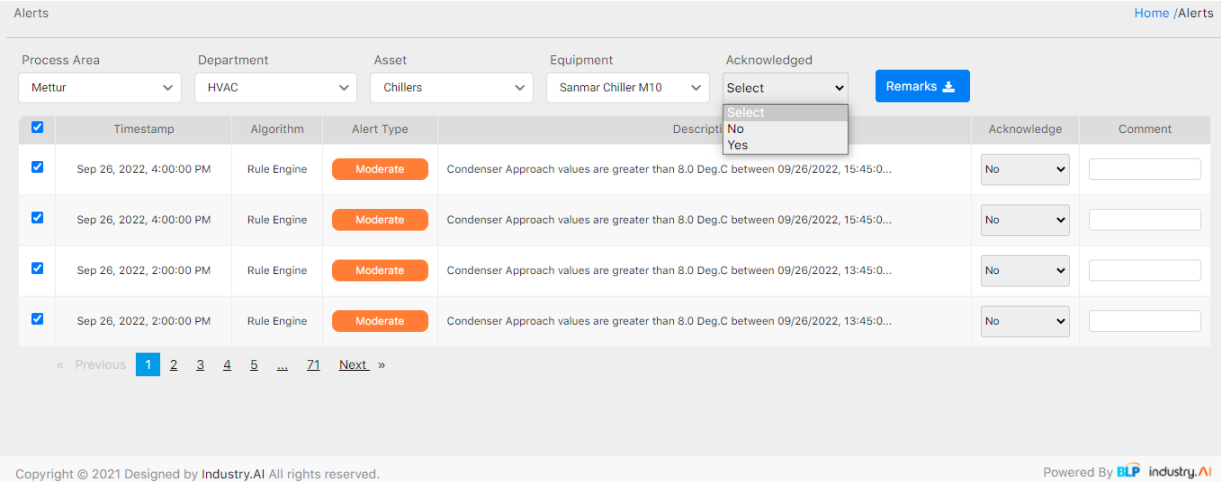
- **Table Columns**:
  - **Timestamp**: Displays the time the alert was generated.
  - **Description**: Provides a brief description of the alert.
  - **Ack**: Displays whether the alert has been acknowledged. Default is ‘No’.
  - **Comment**: Field for adding user comments.

Acknowledging Alerts

1. **Single Alert**:
   - In the "Ack" column, select "Yes" from the dropdown to acknowledge an alert.
   - A success popup will confirm the acknowledgment.



2. **Multiple Alerts**:
   - Select multiple alerts in the checkbox column.
   - The Acknowledge dropdown will appear with options "No" & "Yes."
   - Select "Yes" to acknowledge the selected alerts.



Adding Comments

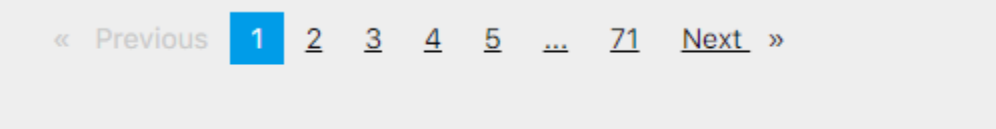
- Enter a comment in the "Comment" field next to the alert.
- Press enters to save the comment.
- A success popup will confirm the comment has been added.

Downloading Acknowledged Alerts

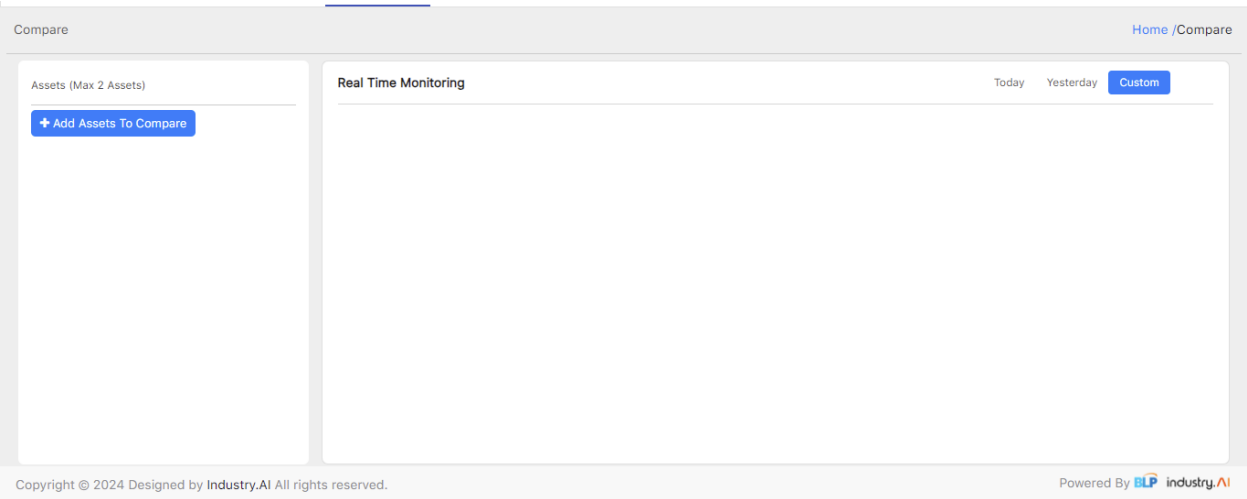
- Click the "Remarks" button to download an Excel report of acknowledged alerts.

Pagination

- Use pagination controls at the bottom of the table to navigate through multiple pages of alerts.



6.Compare

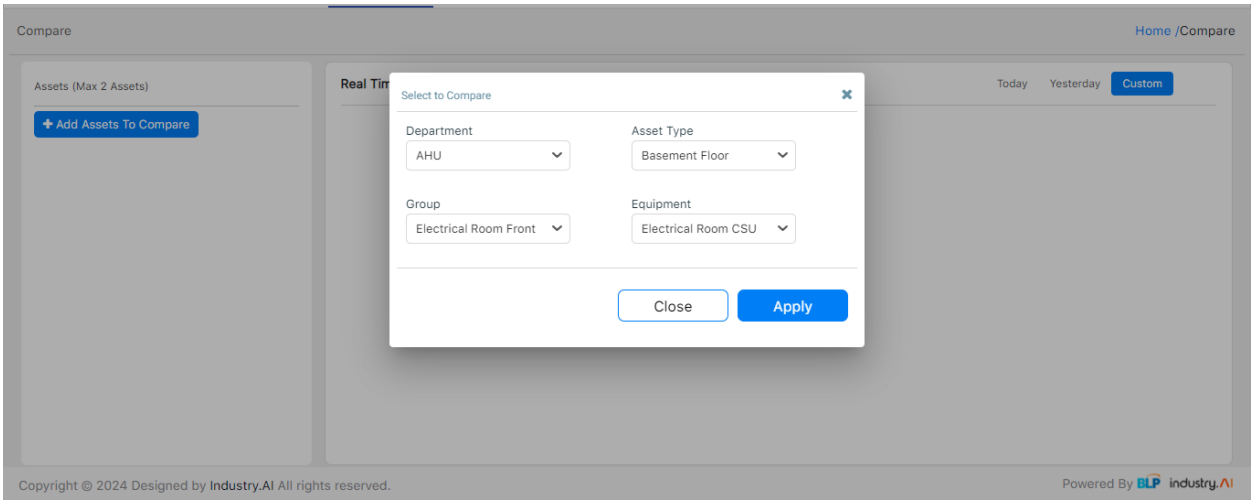


The Compare Assets page allows users to compare data from multiple assets, including raw data and KPI data. Users can select specific assets, departments, groups, and equipment to compare trends between up to three assets at a time.

Page Overview

By default, users can see the Compare Assets page. To compare assets, follow the steps below:

Adding Assets to Compare



1. **Add Assets to Compare Option**:
    - Click the "Add Assets to Compare" button.
2. **Select Department**:
    - In the department dropdown, select the department you want to compare.
3. **Select Asset Type**:
    - In the asset type dropdown, choose the type of asset.
4. **Select Group**:
    - In the group dropdown, select the group for the asset.
5. **Select Equipment**:
    - In the equipment dropdown, choose the specific equipment.
6. **Apply Selection**:
    - Click "Apply" to load the selected asset for comparison.
    - The page will display the selected asset and its data.

Comparing Multiple Assets

1. **Add Additional Assets**:
    - To compare another asset, click the "Add Assets to Compare" button again.
    - Repeat the steps to select the department, asset type, group, and equipment.
    - Click "Apply" to add the asset for comparison.
2. **Maximum Assets**:
    - You can compare up to two assets simultaneously.

Data Comparison Options

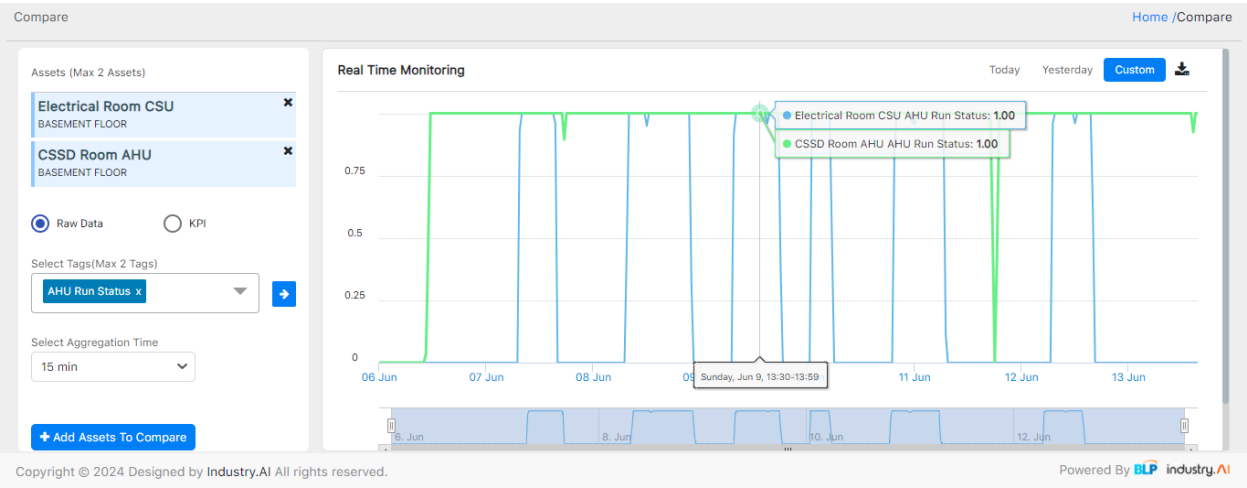
1. **Select Tag Fields**:
    - In the asset department, choose the tag you want to compare.
    - Click the load arrow to load the tags in the trends.
2. **Select Aggregation Time**:
    - Use the Select aggregation time dropdown to choose between 15-minute or 60-minute intervals.

Viewing Trends and Data

1. **Hover Over Trends**:
    - When you hover your mouse over a trend, a tooltip will display the tag name, tag values, and unit.
2. **Date Selection**:
    - Use the custom date picker to select dates for today, this week, or a custom date range.

Downloading Reports

1. **Download CSV Report**:
    - Click the download icon to export the selected tags' data in a CSV report.



7.User management

The User Management page allows administrators to manage user accounts, including adding new users, editing user details, deleting users, and setting page access permissions.

Page Overview

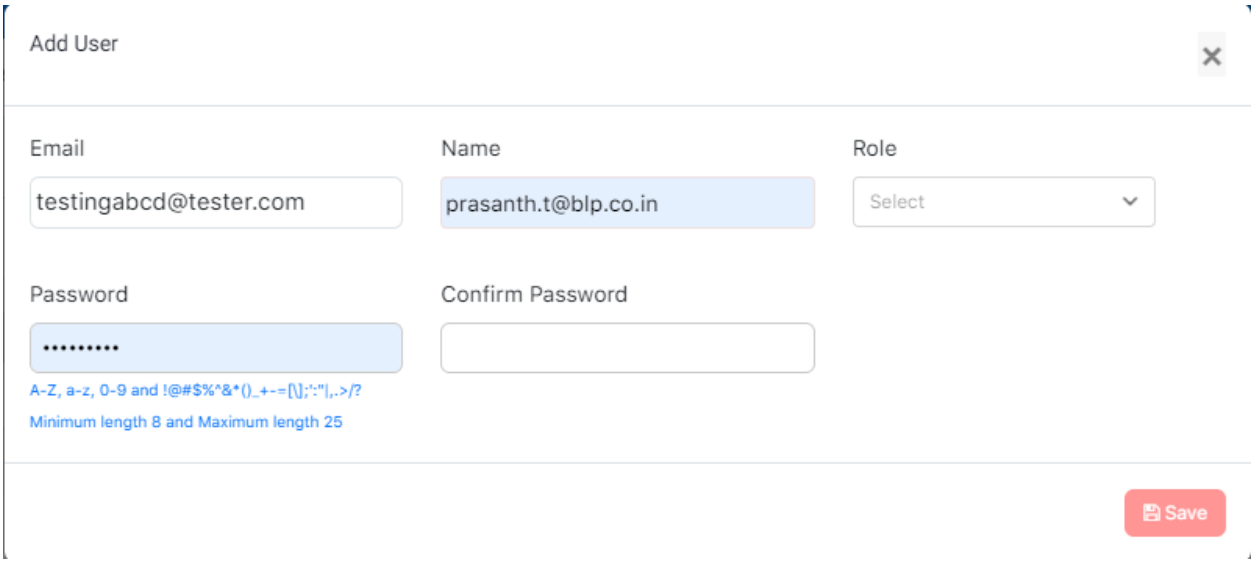
Upon accessing the User Management page, users will see a list of existing users and options to perform various actions such as adding new users, editing details, deleting accounts, and managing page access.

User Management Table

- **Columns**:
  - **User Name**: Displays the user's name.
  - **Email**: Shows the user's email address.
  - **Role**: Displays the user's role (e.g., Admin, User).
  - **Actions**: Provides options to edit, delete, and set page access for each user.

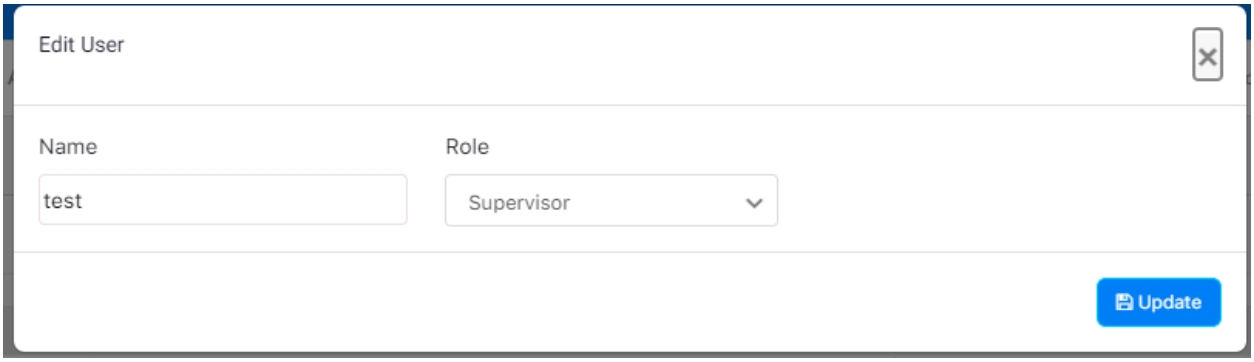
Adding a New User

1. **Add User Button**:
   - Users can see the "Add User" button at the top and bottom of the table that displays the list of created users.
   - Click the "Add User" button to create a new user account.
2. **Enter User Email**:
   - An "Add User" popup screen will appear with an email field.
   - Enter the email and click "Next."
3. **Enter User Details**:
   - Another popup screen will appear.
   - For new user creation, provide the following details:
     - **Name**: User's full name
     - **Role**: User's role (Corporate head, Admin, User)
     - **Email**: User's email address
     - **Password**: User's password
     - **Confirm Password**: Re-enter the password for confirmation
4. **Save User**:
   - Click "Save" to create the new user account.
   - The new user will appear in the User Management table.



Editing User Details

1. **Edit Icon**:
   - Click the pencil icon in the Actions column next to the user you want to edit.
2. **Update Details**:
   - Modify the user's name, email, or role as needed.
3. **Save Changes**:
   - Click "Save" to apply the changes.
   - The updated details will be reflected in the User Management table.

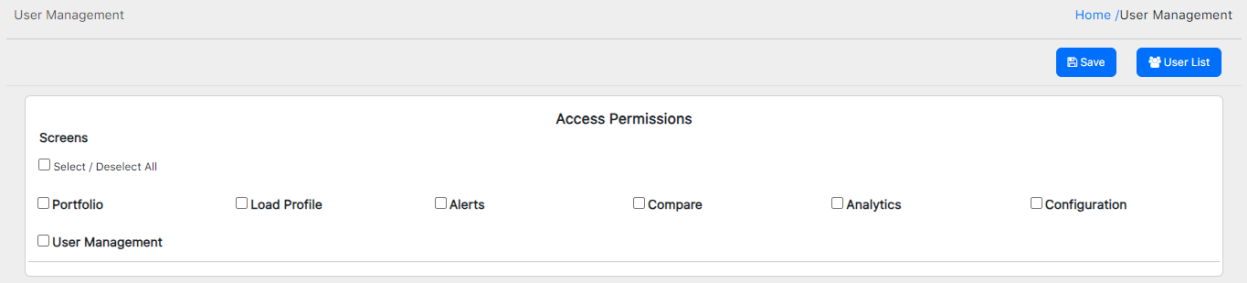


Deleting a User

1. **Delete Icon**:
   - Click the trash icon in the Actions column next to the user you want to delete.
2. **Confirm Deletion**:
   - A confirmation dialog will appear. Click "Confirm" to delete the user.
   - The user will be removed from the User Management table.

Setting Page Access

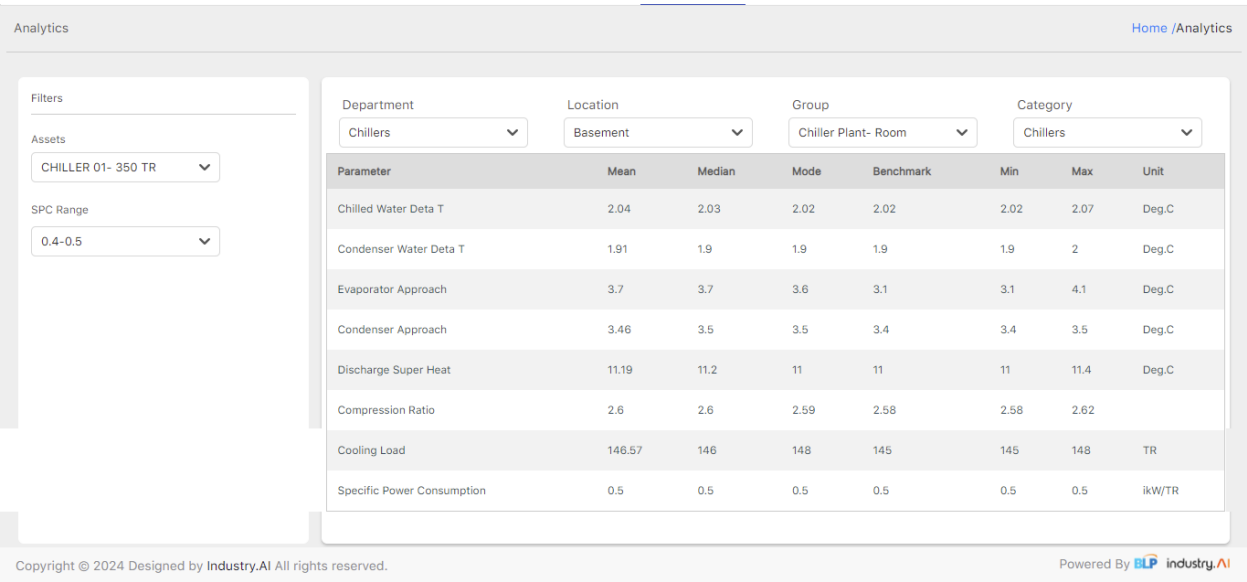
1. **Page Access Icon**:
    - Click the page access icon (usually represented by a key or lock symbol) in the Actions column next to the user you want to set page access for.
2. **Assign Permissions**:
    - Select the pages or modules the user should have access to.
    - Save the changes to update the user's access permissions.



Steps to Use the User Management Page

1. **Viewing Users**:
    - The User Management table displays all users with their names, email addresses, roles, and available actions.
2. **Adding a New User**:
    - Click "Add User" and fill in the details.
    - Save the new user to add them to the table.
3. **Editing User Details**:
    - Click the edit icon, update the necessary information, and save the changes.
4. **Deleting a User**:
    - Click the delete icon and confirm the deletion in the dialog box.
5. **Setting Page Access**:
    - Click the page access icon, assign the appropriate permissions, and save the changes.

8.Analytics



The Analytics page allows users to filter and analyze data based on various parameters. It provides insights through statistical measures and benchmarks for selected assets and SPC (Statistical Process Control) ranges.

Page Overview

Upon accessing the Analytics page, users will see various filters and a data table with dropdowns to select different categories and parameters for analysis.

Filters and Data Table

- **Filters**:
  - **Asset Filter**: Users can filter data based on specific assets.
  - **SPC Range Filter**: Users can select the SPC range to filter the data accordingly.

Data Table

The data table displays the following information based on the selected filters:

- **Columns**:
  - **Parameter**: The specific metric or parameter being analyzed.
  - **Mean**: The average value of the parameter.
  - **Median**: The middle value when the data set is ordered.
  - **Mode**: The most frequently occurring value in the data set.
  - **Benchmark**: A predefined standard or point of reference.
  - **Min**: The minimum value in the data set.

- **Max**: The maximum value in the data set.
- **Unit**: The unit of measurement for the parameter.

Dropdowns

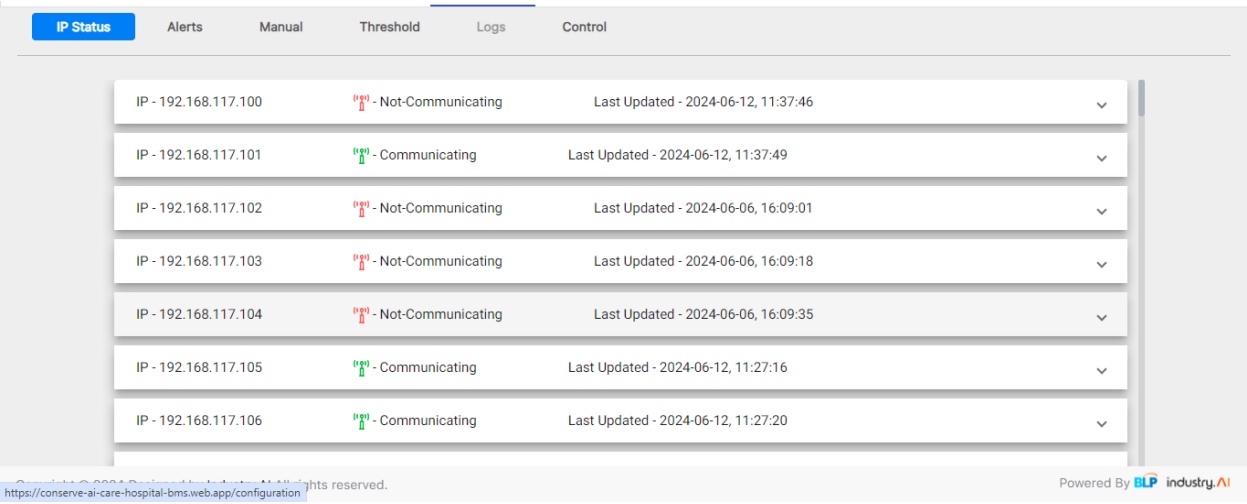
- **Department Dropdown**: Allows users to select a department to filter the data.
- **Location Dropdown**: Allows users to select a location to filter the data.
- **Group Dropdown**: Allows users to select a group to filter the data.
- **Category Dropdown**: Allows users to select a category to filter the data.

Steps to Use the Analytics Page

1. **Accessing the Page**:
   - Click on the Analytics tab in the navigation bar to access the page.
2. **Applying Filters**:
   - Use the filters to select the department, asset, and SPC range.
   - The data table will load the relevant data based on the selected filters.
3. **Using Dropdowns**:
   - Select the appropriate options from the department, location, group, and category dropdowns.
   - The table will update to reflect the selected parameters.
4. **Analyzing Data**:
   - Review the statistical measures (mean, median, mode) and benchmarks provided in the table.
   - Use the min and max values to understand the range of the parameter.

9.Configuration

9.1 IP Status



The IP Status tab, part of the Configuration page, allows users to monitor the communication status of various IP addresses. By default, this tab is selected when accessing the Configuration page.

Page Overview

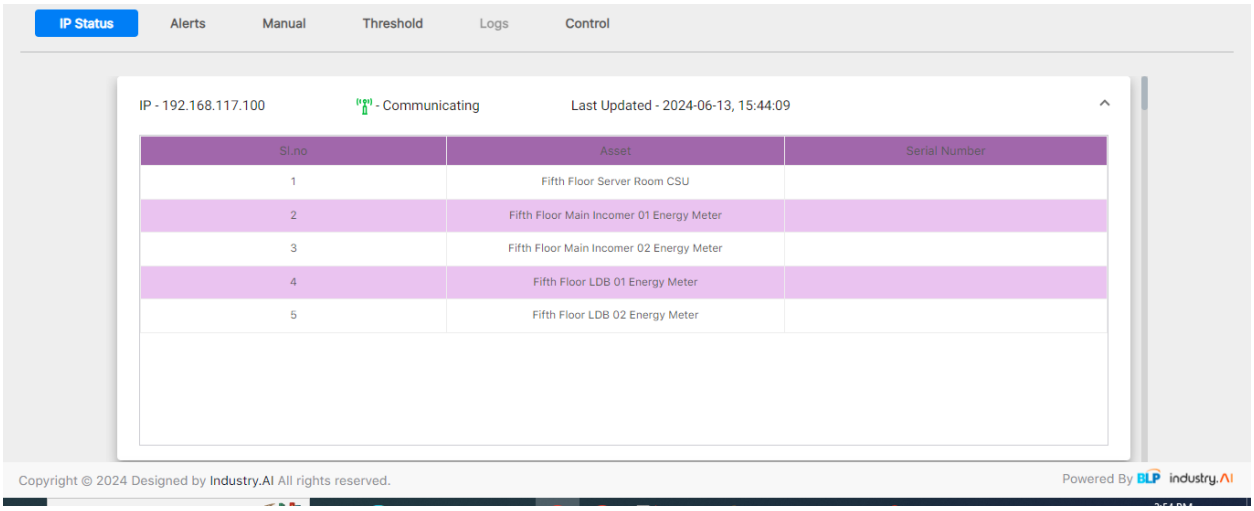
Upon accessing the IP Status tab, users will see a list of IP addresses along with their communication status, indicated by color-coded antennas, and the last updated date and time.

Features and Functionality

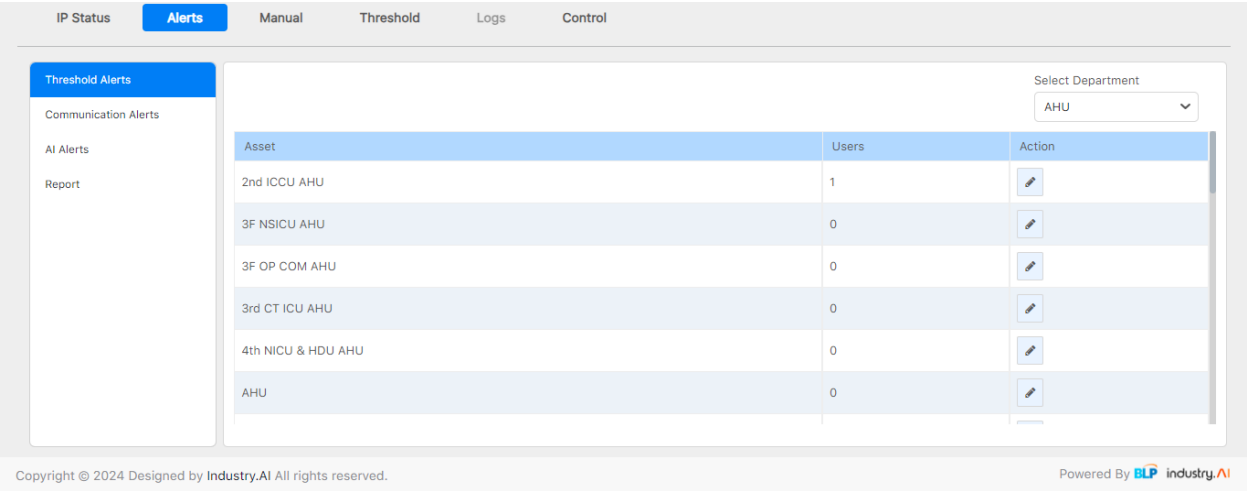
- **IP List**:
  - Displays all the IP addresses being monitored.
  - Shows whether each IP is currently communicating or not.
- **Status Indicators**:
  - **Communicating**: If an IP address is successfully communicating, it will display a green antenna icon and the status "Communicating."
  - **Not Communicating**: If an IP address is not communicating, it will display a red antenna icon and the status "Not Communicating."
- **Last Updated**:
  - Shows the date and time when the IP status was last updated.

Interactions

- **IP Click**:
  - Clicking on an IP address will display the assets connected to that IP. This allows users to quickly identify which assets are affected if an IP is not communicating.



9.2 Alerts



The Alerts tab provides users with the ability to view and manage different types of alerts, including Threshold Alerts, Communication Alerts, AI Alerts, and Reports. Additionally, users can configure email notifications for these alerts.

Page Overview

Upon accessing the Alerts tab, users will see sections for different types of alerts:

- **Threshold Alerts**
- **Communication Alerts**
- **AI Alerts**
- **Reports**

Configuring Email Alerts

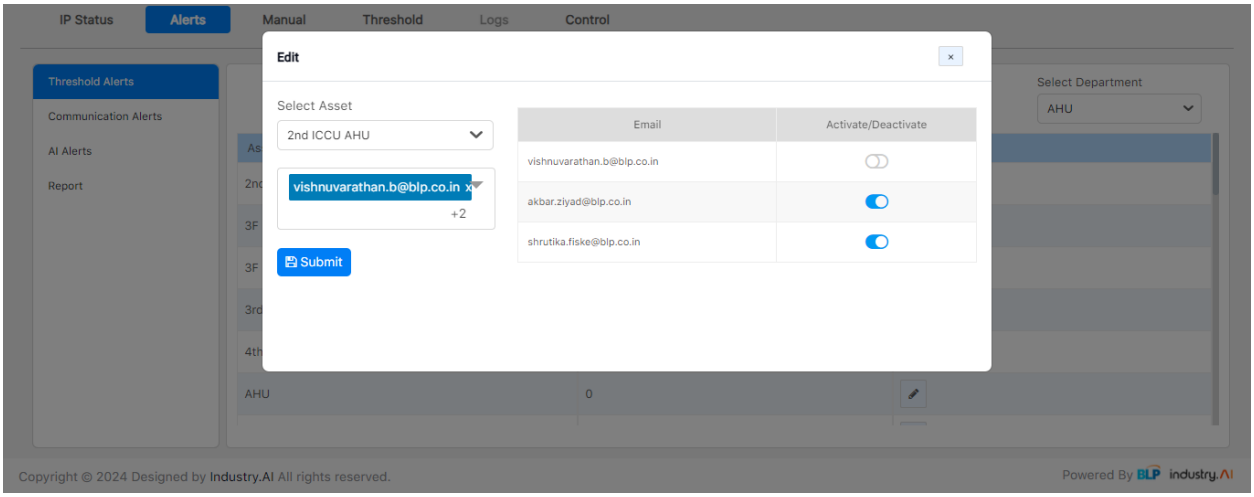
Users can configure email notifications for specific alerts. This involves selecting which alerts to receive via email and specifying the email addresses that should receive these notifications.

Steps to Configure Email Alerts

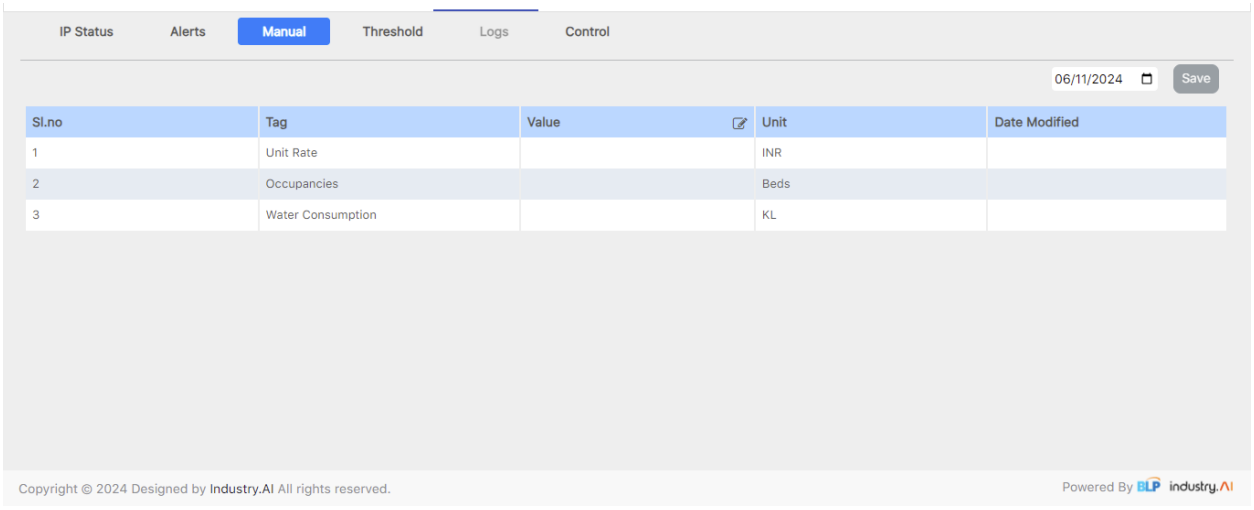
1. **Accessing the Alerts Tab**:
    - Click on the Alerts tab to navigate to the Alerts page.
2. **Selecting Alert Type**:
    - Choose the type of alert you want to configure (Threshold Alerts, Communication Alerts, or AI Alerts).
3. **Action Icon**:
    - Click on the action icon corresponding to the selected alert type. This will open a configuration popup screen.
4. **Configuring Alerts**:

- **Select Asset**: Use the asset dropdown to select the asset for which you want to configure the alert.
- **Email IDs**: The next dropdown will display the configured email IDs. Select the email IDs that should receive the alert notifications.

5. **Submit Configuration**:
   - Click the submit button to save the configuration. The configured alert will now appear in the table with an active/deactivate toggle button.
6. **Managing Alerts**:
   - Use the active/deactivate toggle button to enable or disable alerts as needed. This allows users to easily manage their alert notifications from the Alerts page.



9.3 Manual



The Manual screen allows users to manually enter data parameters.

Page Overview

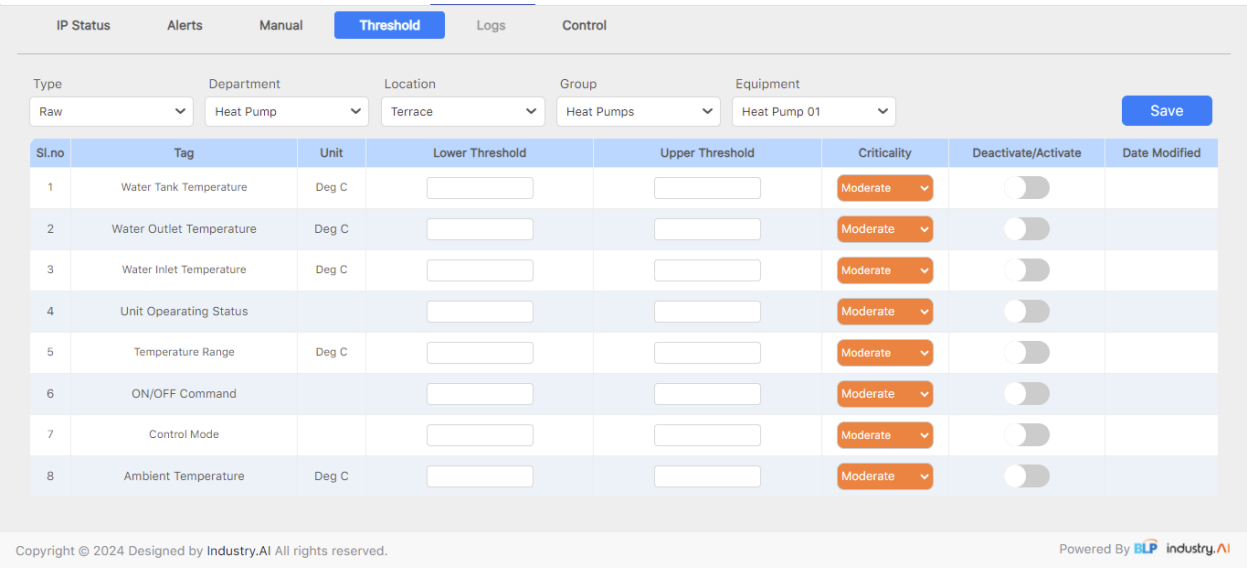
Upon accessing the Manual screen, users will see:

- A **date picker** to select the date for which data is being entered.
- A **save button** to save the entered data.
- A **table** displaying manual entry parameters with columns for the parameter name and value.

Steps to Enter Data Manually

1. **Select Date**:
    - Use the date picker to select the date for which you want to enter data.
2. **Enter Values**:
    - Locate the desired parameter in the table.
    - Click on the pencil icon in the **Value** column next to the parameter.
    - Enter the desired value for the parameter.
3. **Save Entries**:
    - After entering the values, click the **Save** button to save the manual entries.
    - The entered values will be saved and reflected in the respective screens and reports.

9.4 Threshold



The Threshold page allows users to set and manage thresholds for various parameters.

Page Overview

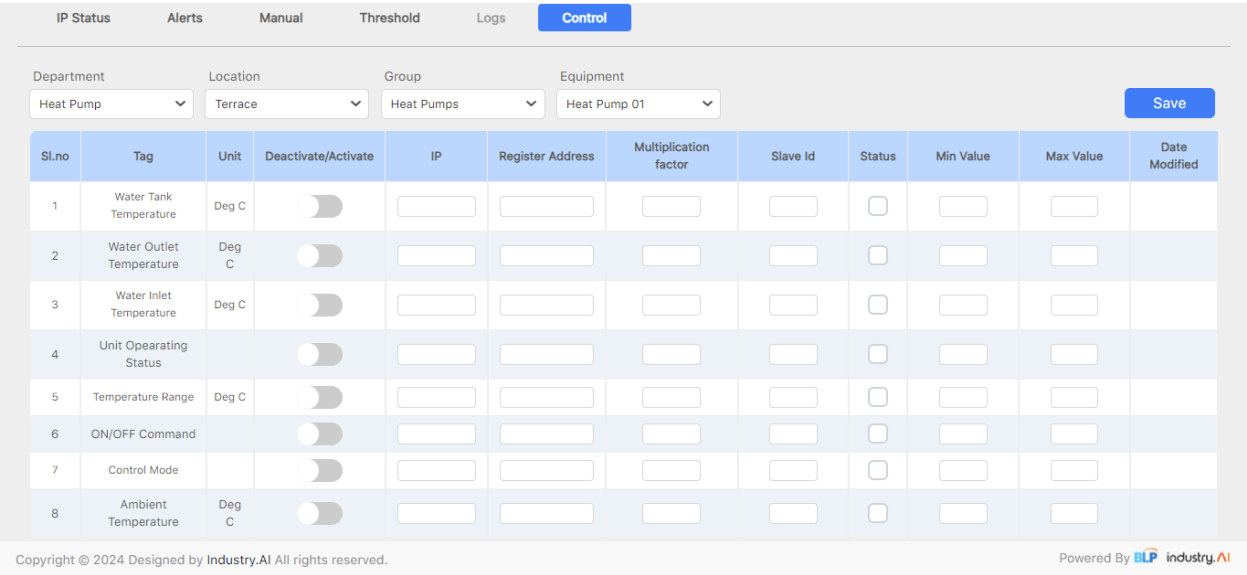
Upon accessing the Threshold page, users will see:

- A **table with multiple dropdowns** for filtering data.
- Dropdowns for **Type**, **Department**, **Location**, **Group**, and **Equipment**.
- A **save button** to save the configured thresholds.
- A **table** displaying the threshold parameters.

Steps to Set Thresholds

1. **Select Asset Type**:
    - Use the **Type** dropdown to select the type of asset.
2. **Select Filters**:
    - Select the **Department** from the department dropdown.
    - Choose the **Location** from the location dropdown.
    - Pick the **Group** from the group dropdown.
    - Select the **Equipment** from the equipment dropdown.
3. **Load Parameters**:
    - Based on the selections, the table will load the parameters.
4. **Configure Thresholds**:
    - The table will display columns for **Si.no**, **Tag**, **Unit**, **Lower Threshold**, **Upper Threshold**, **Criticality**, **Deactivate/Active**, and **Date Modified**.
    - **Tag**: Displays the tags.
    - **Unit**: Displays the units of the tags.
    - **Lower Threshold**: Enter the lower threshold value for the parameter.
    - **Upper Threshold**: Enter the upper threshold value for the parameter.
    - **Criticality**: Select the criticality level for the parameter from the dropdown.
    - **Deactivate/Active**: Toggle to activate or deactivate the parameter.
    - **Date Modified**: Displays the date the parameter was last modified.
5. **Save Configurations**:
    - After configuring the thresholds, click the **Save** button to save the settings.
    - The configured thresholds will be applied, and alerts will be raised based on these thresholds for activated parameters.

9.5 Control



The Control page allows users to enable and manage controls for various assets.

Page Overview

Upon accessing the Control page, users will see:

- **Dropdowns** for filtering data.
- A **table** displaying control parameters based on the selected filters.

Steps to Configure Controls

1. **Select Filters**:
    - Use the **Department** dropdown to select the relevant department.
    - Choose the **Location** from the location dropdown.
    - Pick the **Group** from the group dropdown.
    - Select the **Equipment** from the equipment dropdown.
2. **Load Parameters**:
    - Based on the dropdown selections, the table will load the data.
3. **Configure Control Parameters**:
    - The table will display columns for **Sl.no**, **Tag**, **Unit**, **Deactivate/Active**, **IP**, **Register Address**, **Multiplication Factor**, **Slave ID**, **Status**, **Min Value**, **Max Value**, and **Date Modified**.
    - **Tag**: Displays the parameter name.
    - **Unit**: Displays the unit of the parameter.
    - **Deactivate/Activate**: Toggle button to activate or deactivate the control.
    - **IP**: Enter the IP address for the parameter.

- **Register Address**: Enter the address minus one value.
- **Multiplication Factor**: Enter the multiplication factor for the parameter.
- **Slave ID**: Enter the slave ID.
- **Status**: Enable the status.
- **Min Value**: Enter the minimum value for the parameter.
- **Max Value**: Enter the maximum value for the parameter.
- **Date Modified**: Displays the last modified date.

4. **Save Configurations**:
   - Ensure all fields are correctly filled out.
   - The configured parameters will be used to control the assets based on the settings.

10.AI Insights

The AI Insights page provides users with a comprehensive view of data distribution through graphs.

Page Overview

Upon accessing the AI Insights page, users will see:

- **Dropdowns** for selecting Department and Group.
- A **Date Picker** for selecting the date range.
- A **Distribution Graph** that displays data based on the selected filters.

Steps to Use AI Insights

1. **Select Filters**:
   - Use the **Department** dropdown to select the relevant department.
   - Choose the **Group** from the group dropdown.
2. **Select Date Range**:
   - The Date Picker is set to the last seven days by default.

- To select a different date range, click on the Date Picker and choose the desired range.

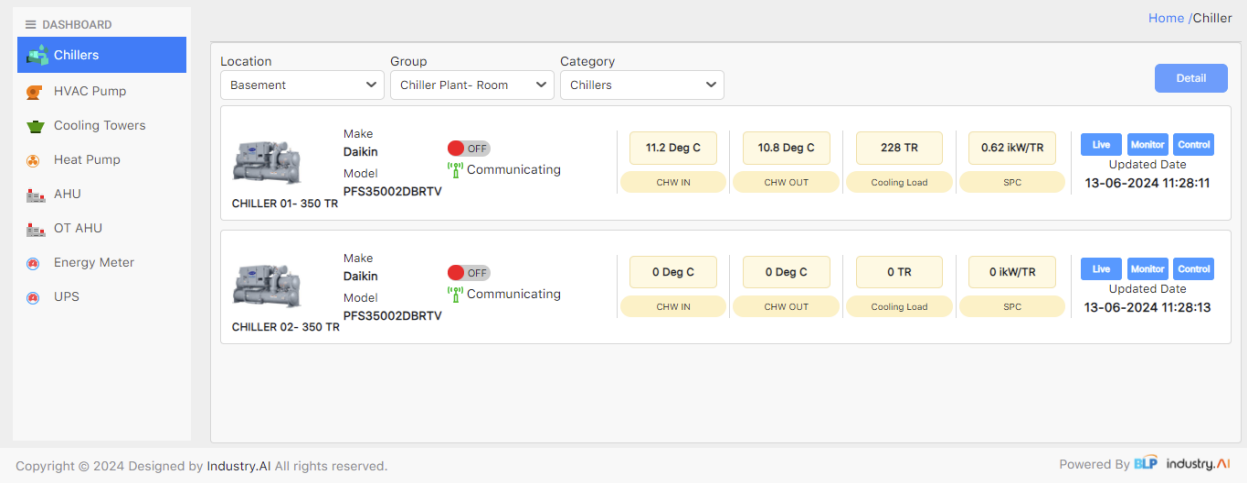
3. **Load Data**:
   - Based on the dropdown selections, click on the load arrow button.
   - The graph will update to display data for the selected department, group, and date range.
4. **Interact with the Graph**:
   - **Mouse Over**: When hovering the mouse over the graph, a tooltip will display the date and corresponding value.
5. **Download the Graph**:
   - Users can download the graph in various formats (PNG, CSV, PDF, JPEG) by clicking on the three lines icon (menu) located on the graph.
   - Choose the preferred format from the download options provided.

11.Left Side Dashboard

Page Overview

On the left-side dashboard, users can see multiple departments: Chillers, HVAC Pumps, Cooling Towers, Heat Pump, AHU, OT AHU, Energy Meter, and UPS.

11.1 Chillers



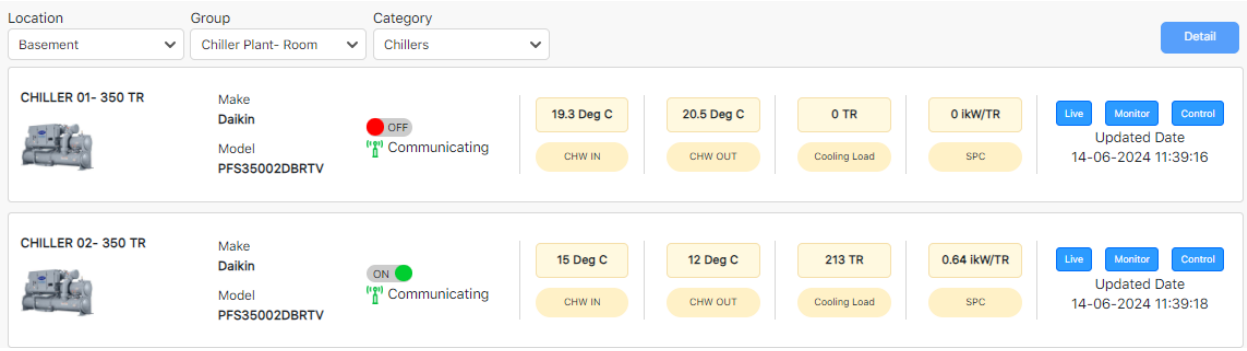
The Chillers section provides detailed insights and controls for chiller assets.

Chiller Details Page

When users click on "Chillers," they are redirected to the Chiller Details page. This page includes:

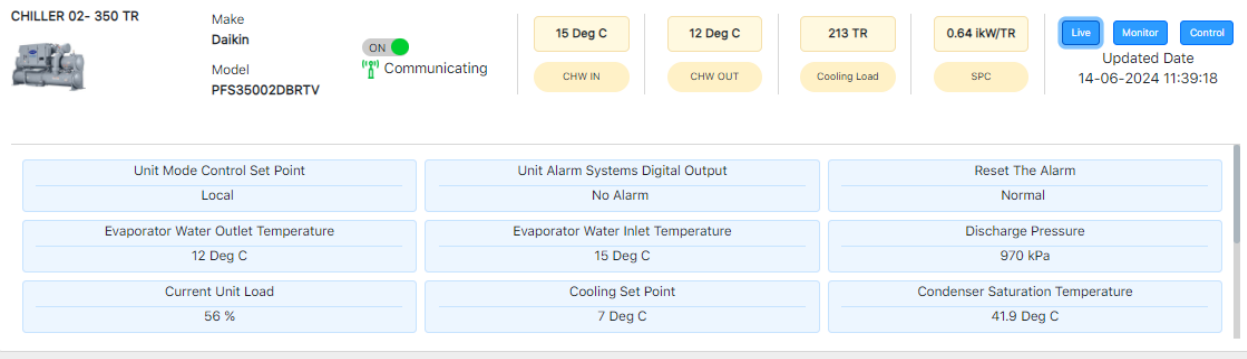
- **Location, Group, and Category Dropdowns**: Select these to filter and display relevant assets.

- **Asset Cards**: Each asset card includes the asset image, name, make, model, communication status, and cards showing the last updated 15-minute aggregation data. The cards also have Live, Monitor, and Control buttons.



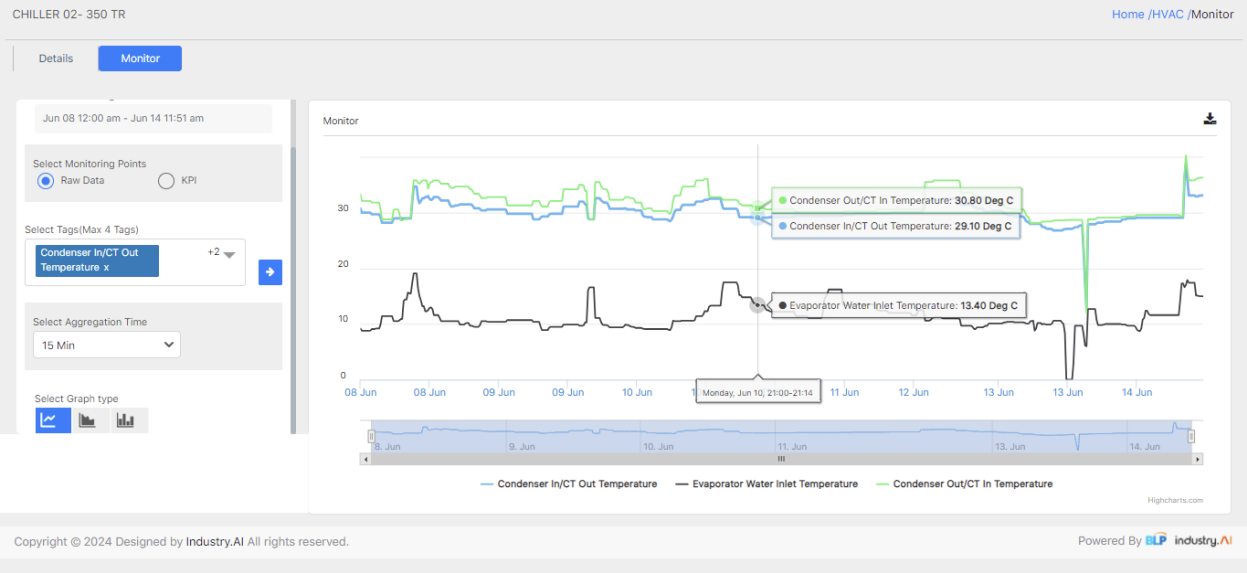
Live Data

- **Live Button**: Clicking this button shows the live values of the asset's tags below the card.



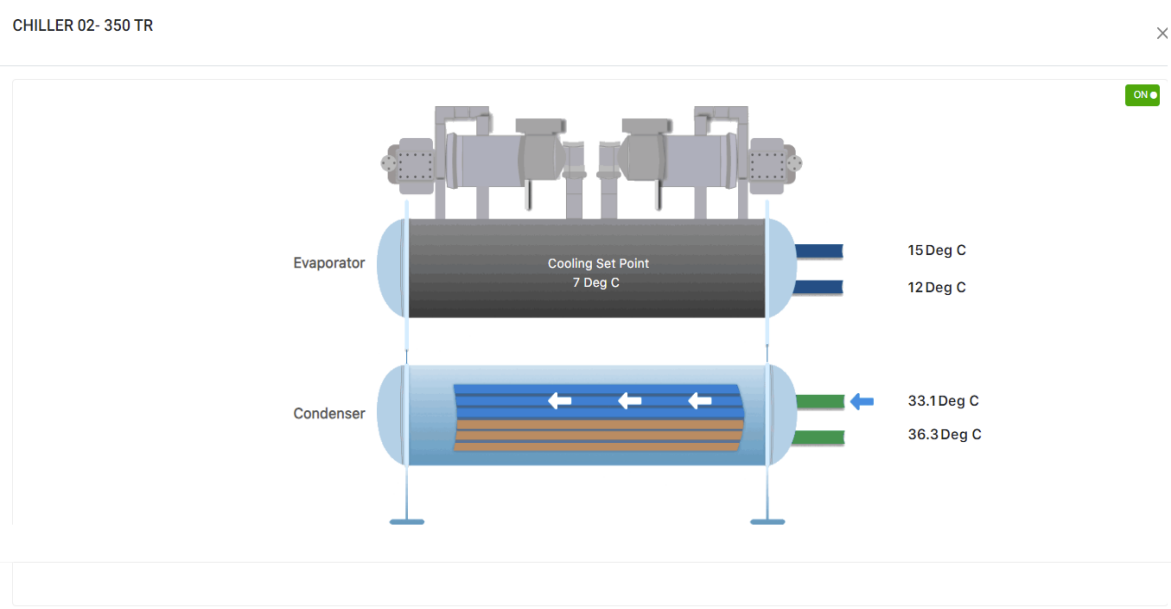
Monitor Data

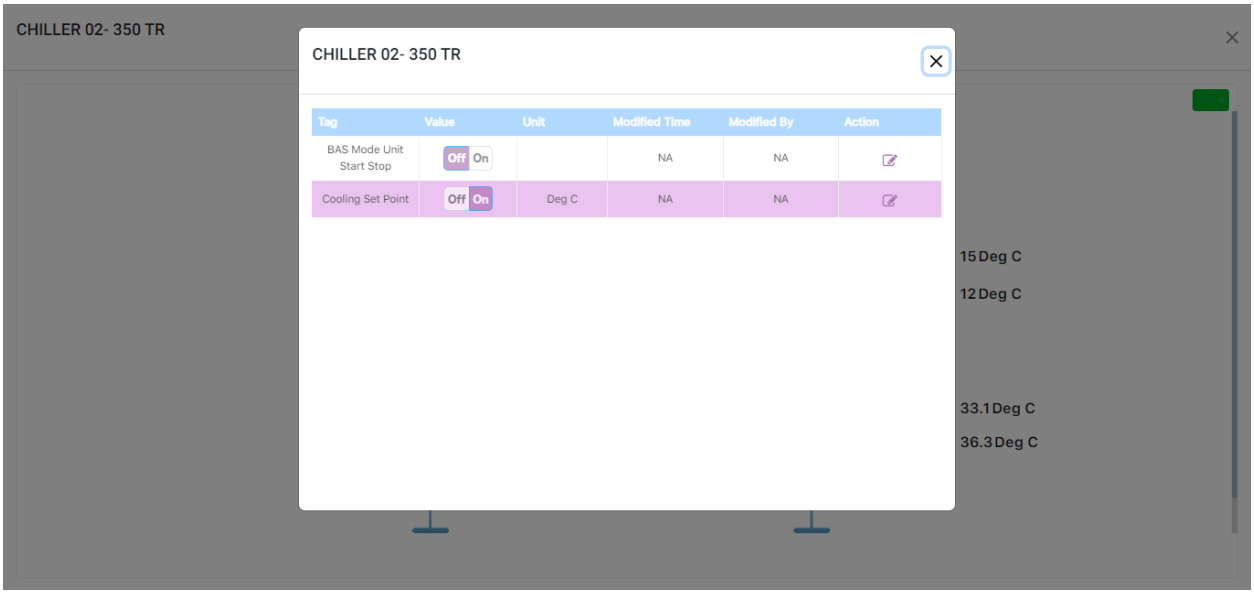
- **Monitor Button**: Clicking this button redirects to the Monitor page, which includes:
  - **Filter Department**:
    - **Date Picker Field**: Select the date to view specific data.
    - **Select Monitoring Field**: Choose between raw data (default) and KPI data using ratio buttons.
    - **Tag Dropdown**: Select up to four tags for raw data.
    - **Aggregation Dropdown**: Choose between 15-minute and 60-minute aggregations.
    - **Select Graph Type Field**: Choose the graph type.
    - **Mean, Median, Standard Deviation**: Available for single tag only.
  - **Graph**: Displays data based on filter selections. Hovering over the graph shows a tooltip with the value and timestamp.
  - **Download Icon**: Download data in CSV format.
  - **Breadcrumb Navigation**: Clicking on breadcrumbs redirects back to the details page.



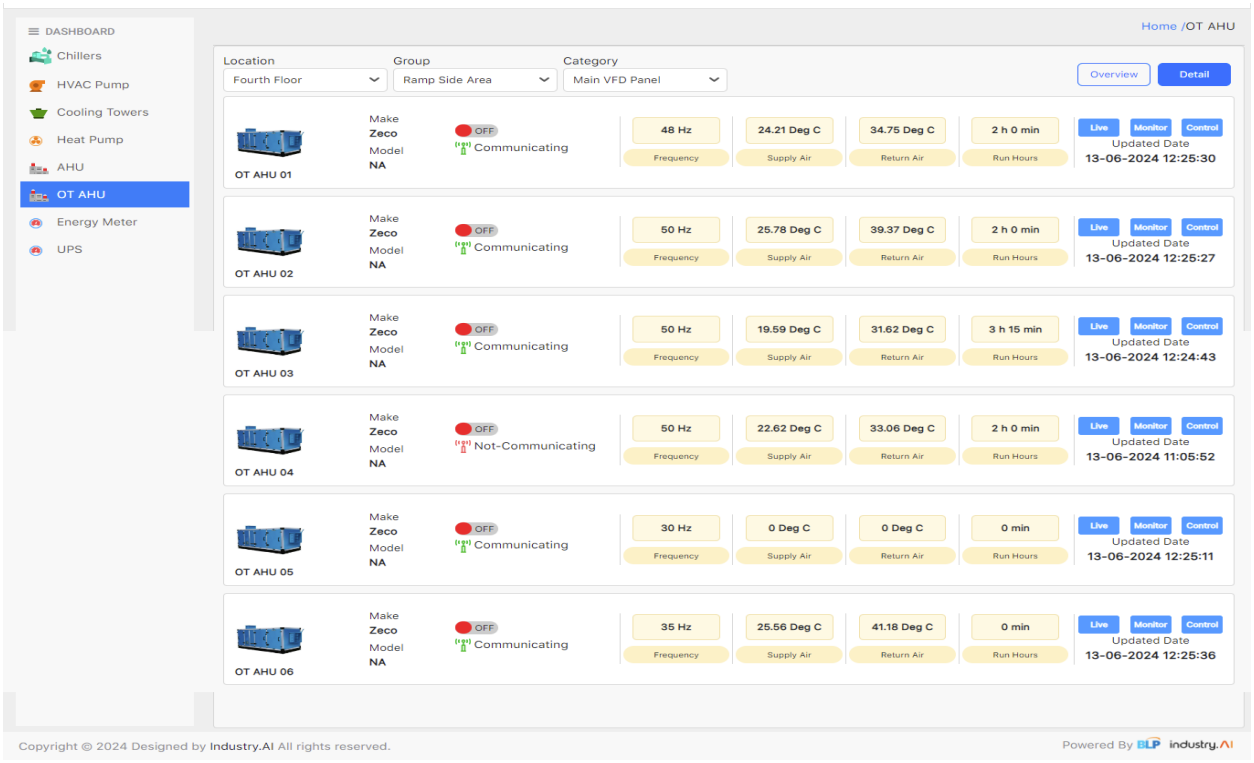
Control Assets

- **Control Button**: Clicking this button redirects to the Control screen, which includes:
  - **On/Off Status**: Shows the asset's status with a diagram and other parameter values.
  - **Asset Diagram**: Clicking on the image opens a popup screen displaying enabled control parameters.
  - **Action Column**: Set values and click the tick icon to apply changes. The modification will reflect within 2 minutes and show the modified time and user.





11.2 OT AHU

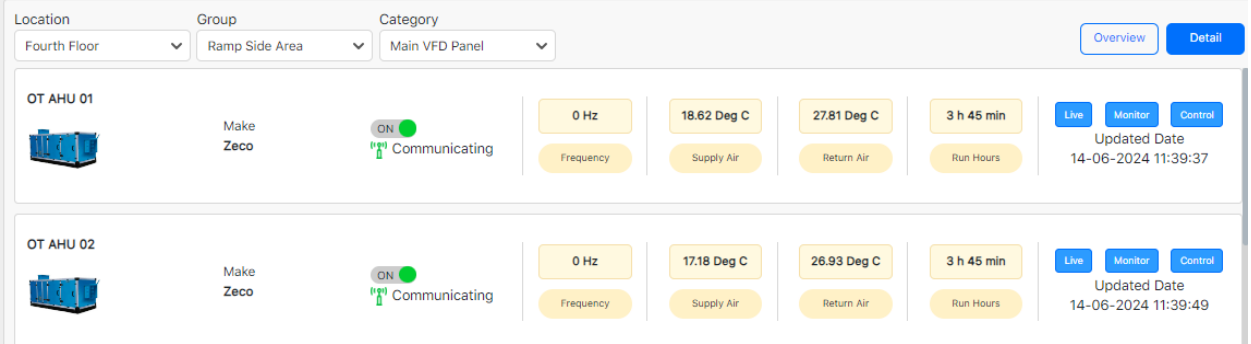


The OT AHU section provides comprehensive insights and controls for OT AHU assets.

OT AHU Details Page

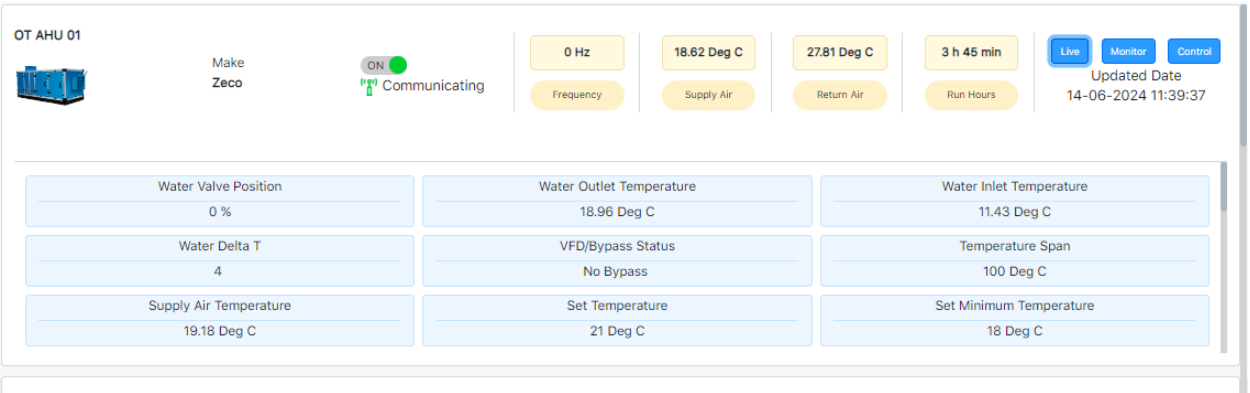
When users click on "OT AHU," they are redirected to the OT AHU Details page. This page includes:

- **Location, Group, and Category Dropdowns**: Select these to filter and display relevant assets.
- **Asset Cards**: Each asset card includes the asset image, name, make, model, communication status, and cards showing the last updated 15-minute aggregation data. The cards also have Live, Monitor, Control, and Overview buttons.



Live Data

- **Live Button**: Clicking this button shows the live values of the asset's tags below the card.



Monitor Data

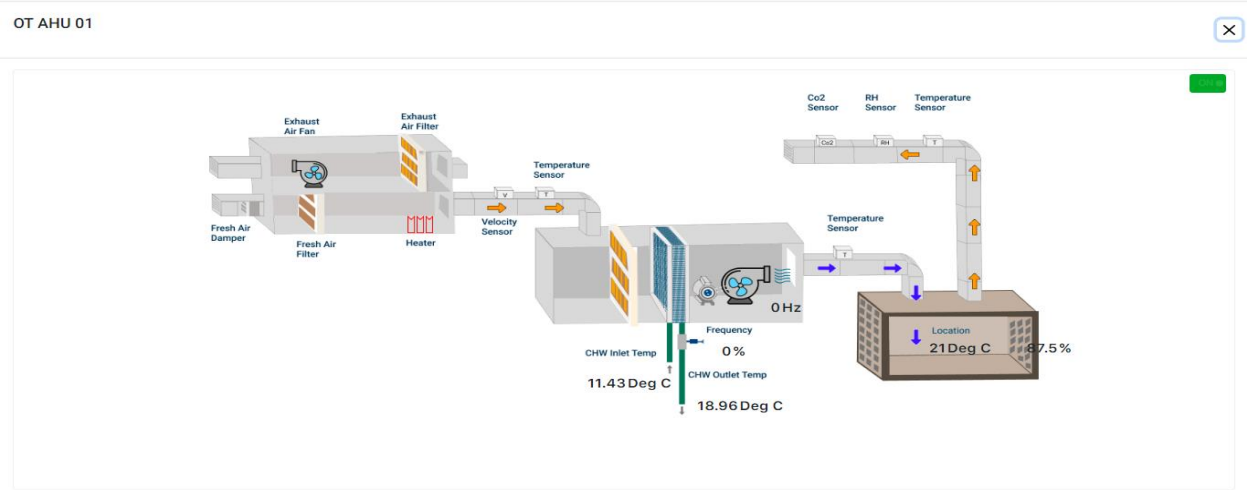
- **Monitor Button**: Clicking this button redirects to the Monitor page, which includes:
  - **Filter Department**:
    - **Date Picker Field**: Select the date to view specific data.
    - **Select Monitoring Field**: Choose between raw data (default) and KPI data using ratio buttons.
    - **Tag Dropdown**: Select up to four tags for raw data.
    - **Aggregation Dropdown**: Choose between 15-minute and 60-minute aggregations.

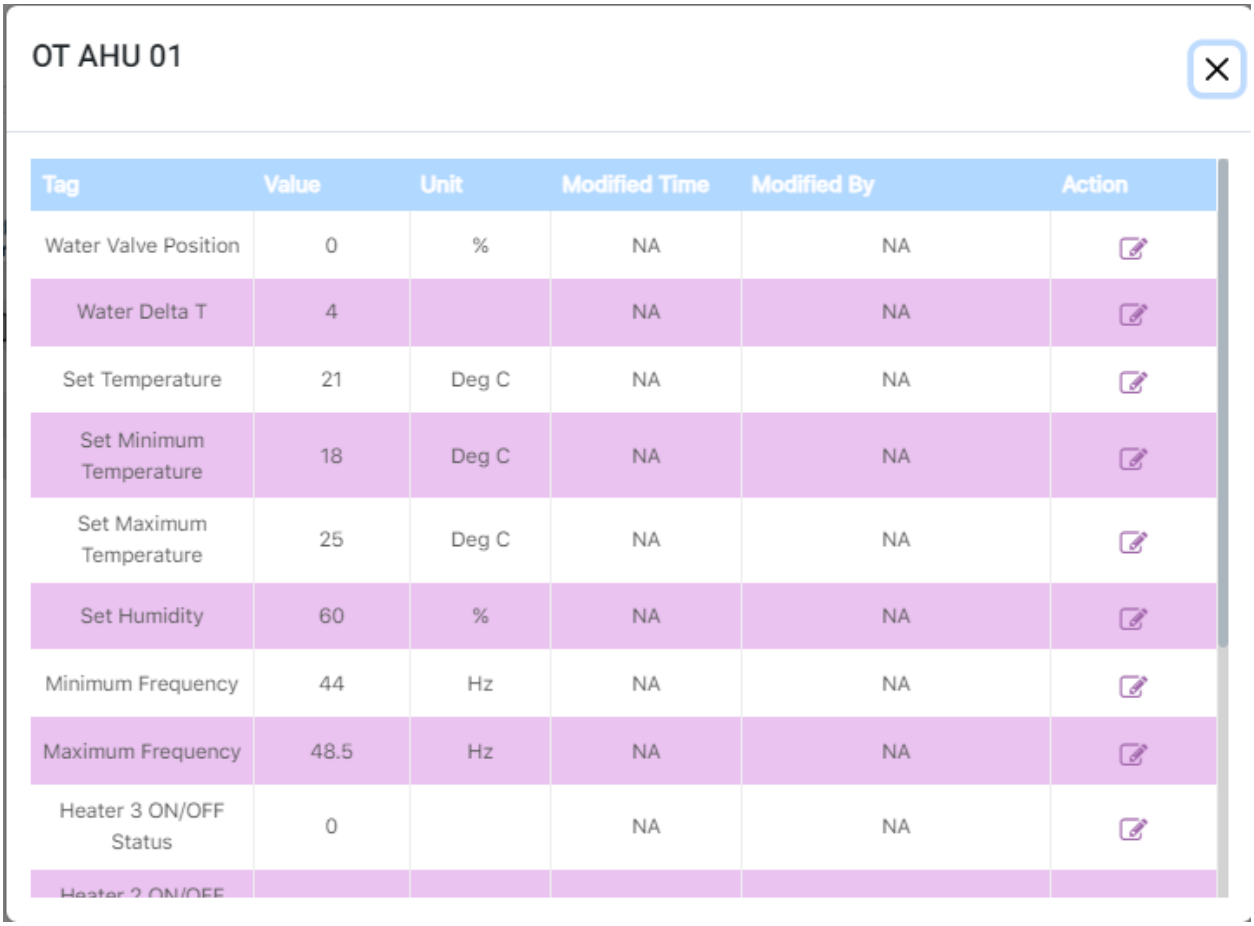
- **Select Graph Type Field**: Choose the graph type.
- **Mean, Median, Standard Deviation**: Available for single tag only.

- **Graph**: Displays data based on filter selections. Hovering over the graph shows a tooltip with the value and timestamp.
- **Breadcrumb Navigation**: Clicking on breadcrumbs redirects back to the details page.
- **Download Icon**: Download data in CSV format.

Control Assets

- **Control Button**: Clicking this button redirects to the Control screen, which includes:
  - **On/Off Status**: Shows the asset's status with a diagram and other parameter values.
  - **Asset Diagram**: Clicking on the image opens a popup screen displaying enabled control parameters.
  - **Action Column**: Set values and click the tick icon to apply changes. The modification will reflect within 2 minutes and show the modified time and user.





OT AHU 01

Tag	Value	Unit	Modified Time	Modified By	Action
Water Valve Position	0	%	NA	NA	
Water Delta T	4		NA	NA	
Set Temperature	21	Deg C	NA	NA	
Set Minimum Temperature	18	Deg C	NA	NA	
Set Maximum Temperature	25	Deg C	NA	NA	
Set Humidity	60	%	NA	NA	
Minimum Frequency	44	Hz	NA	NA	
Maximum Frequency	48.5	Hz	NA	NA	
Heater 3 ON/OFF Status	0		NA	NA	
Heater 2 ON/OFF					

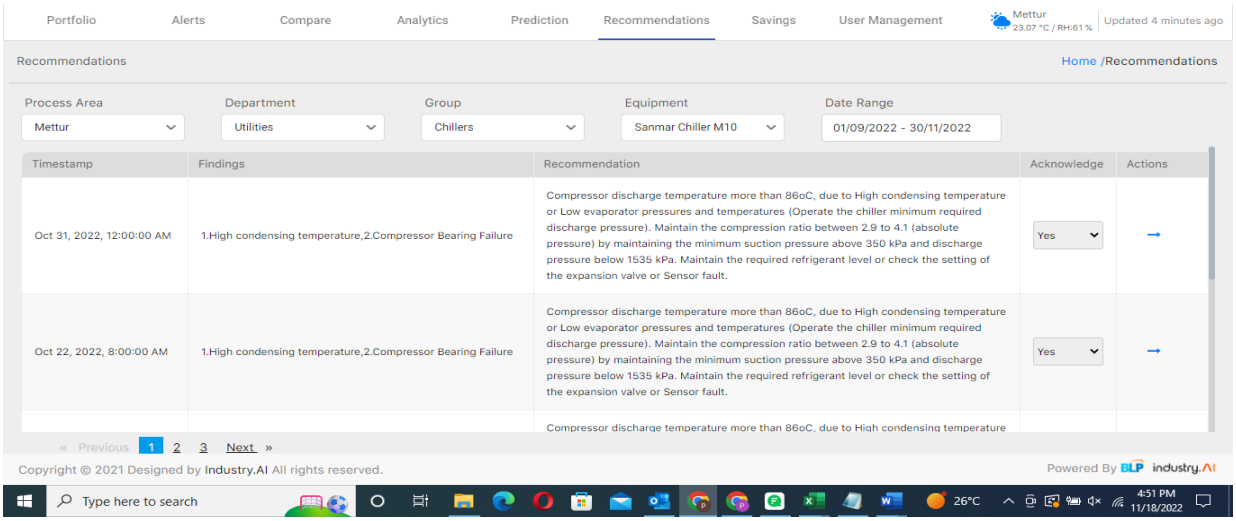
Overview Feature

- **Overview Button**: Clicking this button redirects to the Overview screen, which includes:
  - **Location Dropdown**: Select a location to filter and display assets.
  - **Table**: Shows location-wise asset tags with values based on the location selection.

Asset Name	Run Hours	CHW IN	CHW Out	Supply Air	Return Air	Valve Position	Current	Power	Delta T	Set Temp
OT AHU 01	90.472 h	11.39 Deg C	18.84 Deg C			0.0 %			7.46 Deg C	21.0 Deg C
OT AHU 02	35.576 h	15.89 Deg C	11.83 Deg C			0.0 %			4.08 Deg C	21.0 Deg C
OT AHU 03	120.424 h	12.71 Deg C	15.37 Deg C			100.0 %			2.66 Deg C	21.0 Deg C
OT AHU 04	106.435 h	11.58 Deg C	12.77 Deg C			100.0 %			1.17 Deg C	21.0 Deg C
OT AHU 05	53.8 h	11.27 Deg C	11.5 Deg C			0.0 %			0.17 Deg C	21.0 Deg C
OT AHU 06	49.224 h	11.59 Deg C	16.32 Deg C			100.0 %			4.72 Deg C	21.0 Deg C

12.Recommendations

The Recommendations page allows users to view and manage recommendations related to various processes, departments, assets, and equipment



Page Overview

The Recommendations page is equipped with the following components:

- Dropdowns
- Date selection options
- Search fields
- Filter options

Dropdowns

There are four dropdowns available on the page:

1. **Process Area**: Select the desired process area.
2. **Department**: Select the desired department.
3. **Asset**: Select the desired asset.
4. **Equipment**: Select the desired equipment.

Date Selection

- By default, the Recommendations page displays recommendations from the last seven days.
- To view recommendations for random dates, select "Custom Dates" from the date selection options.

Recommendations Table

The recommendations are displayed in a table format based on the user's selections. The table includes the following columns:

- **Timestamp**: The date and time of the recommendation.
- **Equipment**: The equipment related to the recommendation.
- **Asset**: The asset related to the recommendation.
- **Findings**: The findings related to the recommendation.
- **Recommendation**: The actual recommendation.
- **Ack**: An acknowledgment checkbox.
- **Action**: An action arrow for further actions.

Features and Actions

1. **Acknowledging a Recommendation**:
    - Click on the **Ack** checkbox in the recommendation table to acknowledge a recommendation.
    - A successful acknowledgment will trigger a popup notification confirming the action.
2. **Downloading or Sending a Recommendation**:
    - Click on the **Action** arrow to either download the recommendation or send it via email.
3. **Searching Recommendations**:
    - Use the **Search** field to search for specific recommendations within the table. The table will dynamically update to display search results.
4. **Pagination**:
    - If there are multiple pages of recommendations, use the pagination controls to navigate to other pages.

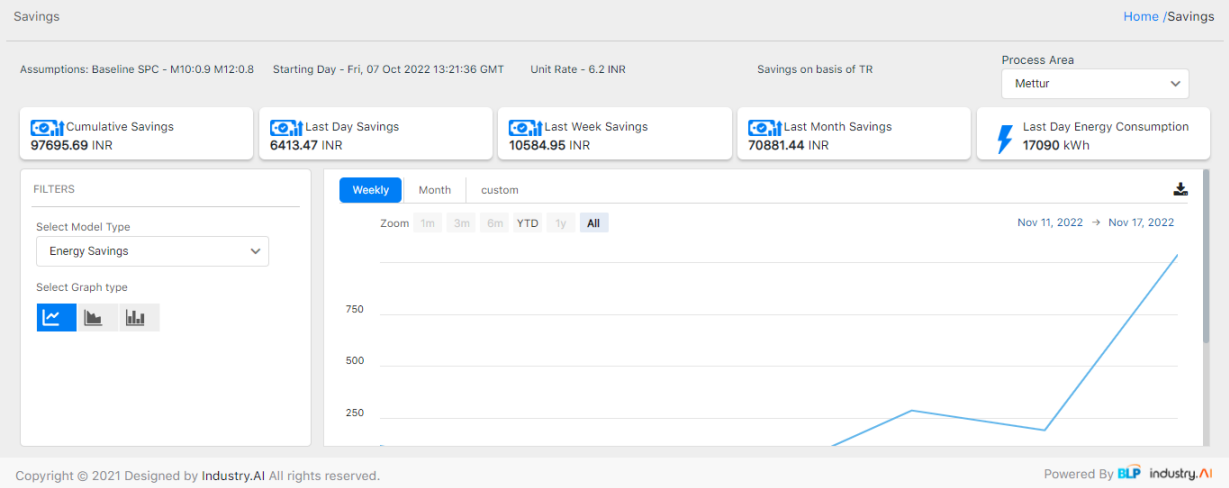
13.Savings

The Savings page allows users to view and analyze energy and cost savings data, as well as CO2 reduction trends.

Page Overview

The Savings page includes the following components:

- Dropdowns for process area, model type, and graph type
- Display of baseline assumptions and savings
- Graph trends
- Filter options
- Download options



Default View

- **Process Area**: By default, the page displays data for the default process area.
- **Top Assets and Graph Trends**: The default view shows assets and graph trends for the process area.

Key Formulas

- **Energy Savings**: Calculated as Base Line - (Specific Power * TR)
- **Energy Cost**: Calculated as Energy Savings * Unit Rate

Dropdowns and Filters

1. **Process Area Dropdown**:
    - By default, the default process area is selected.
    - If users want to change the process area, they can select a different process area from the dropdown .
2. **Baseline Assumptions and Savings**:
    - Below the navigation bar, users can see static texts displaying the assumption baseline SPC, starting day, unit price, and savings based on TR.
3. **Savings Display**:
    - Based on the selected process area, the following values are displayed:
        - Cumulative Savings
        - Last Day Savings
        - Last Week Savings
        - Last Month Savings
        - Last Day Energy Consumption
4. **Filters**:
    - **Select Model Type Dropdown**: Users can choose between Energy Saving, Cost Savings, and CO2 Reduction (default is Energy Saving).

- **Select Graph Type Dropdown**: Users can select from three different graph types. The center graph will update based on this selection.

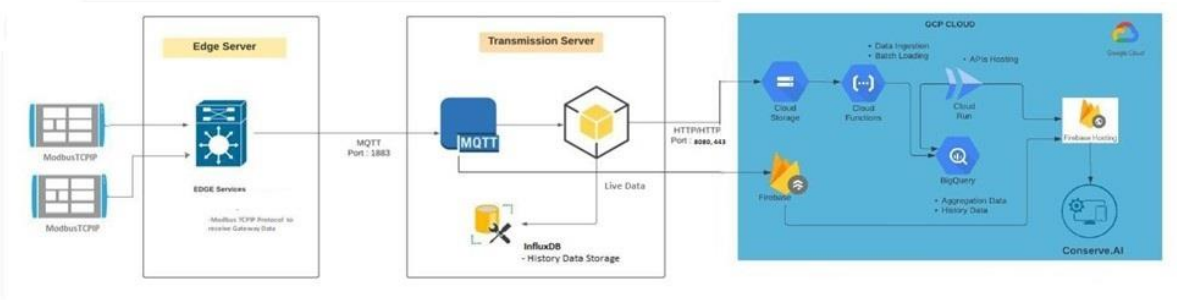
Graph Trends

- The center graph displays trends based on the selected process area and model type.
- The graph navigation bar includes options for daily, weekly, monthly, and custom date selections.

Actions

1. **Downloading Reports**:
   - Users can download an Excel report of the selected model type by clicking on the download icon.

14.Architecture



This architecture diagram illustrates the flow of data from edge devices to the cloud, with the goal of leveraging cloud services for storage, analysis, and hosting. Here's a detailed explanation:

Edge Server

- **Modbus/TCP Devices**: These are the data sources, likely various sensors and meters that communicate using the Modbus/TCP protocol.
- **Edge Server**: This server runs EDGE services which include:
  - **Modbus TCP Protocol to receive Gateway Data**: This part of the edge server is responsible for collecting data from the Modbus/TCP devices.

Data Flow Summary

1. **Edge Devices**: Data is collected from Modbus/TCP devices.
2. **Edge Server**: Aggregates the data and sends it to the Transmission Server via MQTT.
3. **Transmission Server**: Stores historical data in InfluxDB and sends live data to GCP.

4. **GCP Cloud**:
    - **Cloud Storage**: Stores raw or processed data.
    - **Cloud Functions**: Processes data and loads it into BigQuery.
    - **BigQuery**: Stores and enables querying of large datasets.
    - **Cloud Run**: Hosts applications.
    - **Firebase**: Provides backend services and hosting for applications.
5. **Conserve.AI**: User-facing applications that utilize the data stored and processed in GCP.

This setup ensures efficient data collection, processing, and storage, enabling real-time monitoring and historical data analysis for Conserve.AI.

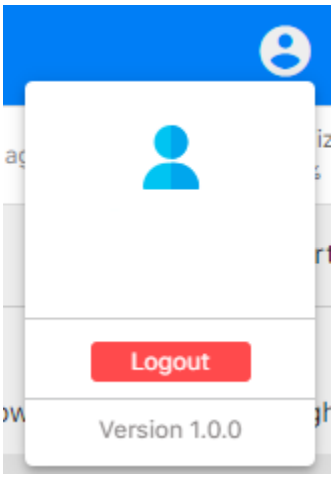
15.KPI Formulas

Asset	Parameter	Formula used	Unit
Chiller-1	Chilled Water Delta T	Chilled Water Entering Temperature- Chilled Water Leaving Temperature	°C
Chiller-1	Condenser Water Delta T	Condenser Water Leaving Temperature-Condenser Water Entering Temperature	°C
Chiller-1	Evaporator Approach	Chilled Water Leaving Temperature-Saturated Suction Temperature	°C
Chiller-1	Condenser Approach	Condenser Saturated Temperature -Condenser water Outlet Temperature	°C
Chiller-1	Discharge Superheat	Discharge Temperature-Condenser Saturated Temperature	°C
Chiller-1	Suction Super Heat	Compressor Suction Temperature-Saturated Suction Temperature	°C
Chiller-1	Compression Ratio	(Discharge Pressure +101.3)/((Suction Pressure+101.3)	
Chiller-1	Cooling Load	Operating flow of chilled water pump 1*Chilled Water Delta T/(4.4*3.024)	TR
Chiller-1	Total Active Power	Total Active Power of chiller -1	kW
Chiller-1	Specific Power Cons.	Total Active Power/Cooling Load	ikW/TR
Chiller-2	Chilled Water Delta T	Chilled Water Entering Temperature- Chilled Water Leaving Temperature	°C

Chiller-2	Condenser Water Delta T	Condenser Water Leaving Temperature-Condenser Water Entering Temperature	°C
Chiller-2	Evaporator Approach	Chilled Water Leaving Temperature-Saturated Suction Temperature	°C
Chiller-2	Condenser Approach	Condenser Saturated Temperature -Condenser water Outlet Temperature	°C
Chiller-2	Discharge Superheat	Discharge Temperature-Condenser Saturated Temperature	°C
Chiiler-2	Suction Super Heat	Compressor Suction Temperature-Saturated Suction Temperature	°C
Chiller-2	Compression Ratio	(Discharge Pressure +101.3)/((Suction Pressure+101.3)	
Chiller-2	Cooling Load	(Operating flow of chilled water pump2)*Chilled Water Delta T/(4.4*3.024)	TR
Chiller-2	Total Active Power	Total Active Power of chiller-2	kW
Chiller-2	Specific Power consumption (ikW/TR)	Total Active Power of chiller -2 /Cooling Load	ikW/TR
Chilled Water Pump- 1	Specific Power consumption (ikW/TR)	(Active Power of Chilled Water pump1 / Cooling Load) when chilled water pump -1 is running	ikW/TR
Chilled Water Pump- 2	Specific Power consumption (ikW/TR)	(Active Power of Chilled Water pump2 / Cooling Load) when chilled water pump -1 is running	ikW/TR
OAT	Wet Bulb Temperature	Tw = T × arctan[0.151977 × (RH% + 8.313659)^(1/2)] + arctan(T + RH%) - arctan(RH% - 1.676331) + 0.00391838 ×(RH%)^(3/2) * arctan(0.023101 × RH%) - 4.686035.	°C
Cooling Tower -1	Approach	Cooling Tower Outlet- Wet Bulb Temperature from OAT	°C
Cooling Tower -1	Range	Cooling Tower Inlet Temperature-Cooling Tower Outlet Temperature	°C
Cooling Tower -1	Effectiveness	Range/(Range+Approach)	%
Cooling Tower -2	Approach	Cooling Tower Outlet- Wet Bulb Temperature from OAT	°C

Cooling Tower -2	Range	Cooling Tower Inlet Temperature-Cooling Tower Outlet Temperature	°C
Cooling Tower -2	Effectiveness	Range/(Range+Approach)	%
Cooling Tower -3	Approach	Cooling Tower Outlet- Wet Bulb Temperature from OAT1	°C
Cooling Tower -3	Range	Cooling Tower Inlet Temperature-Cooling Tower Outlet Temperature	°C
Cooling Tower -3	Effectiveness	Range/(Range+Approach)	%

16.Logout



The log-out process in the application is straightforward. Follow the steps below to log out of your account:

Steps to Log Out

1. **Locate the Profile Icon**:
   - In the top right corner of the application interface, you will see a profile icon.
2. **Click the Profile Icon**:
   - Click on the profile icon to reveal a dropdown menu.
3. **Select the Logout Option**:
   - In the dropdown menu, you will find the **Logout** button along with the version of the application.
   - Click the **Logout** button to log out of your account.

……Thank You……