

# Alerts

Alerts allows for real-time monitoring of incoming sensor data. Custom filters can be designed and run on incoming data to produce alerts as discussed in the following sections.

## Alerts Workflow Overview

To create an alert in Info360, follow these steps:

1. Create a [Search](#) – Define the functions and Boolean qualifiers for querying data.
2. Create a [Track](#) – Apply a search to a specific sensor or group at given interval.
3. Create a [Schedule](#) – Define how and when a Track is run in real time and controls the response to any alerts.
4. View the [Alerts](#) – View, manage and delete any Alerts created from Tracking.

## Search

Searches in Info360 can be used in three ways:

- [Tracking](#) of incoming live data
- Searches of historic data for a desired sensor our sensor group (see Run Search below)
- [Applied to a Chart](#) to highlight data points that satisfy certain criteria

## Design

Searches are created and designed in the Search tab of the [Command Center](#).








Search Group: [ALL] New Edit Delete

Search: Getting Low Pressure New Edit Clone Delete

Expression: (Sensor(' J1406.Pressure') < 40) and ((Sensor('T5004.Tank Level') < 35) or (Sensor('T5000.Tank Level') < 80))

Save Add

Feature	Description
Search Group Selection	A drop-down menu to specify a Search group to constrain the list of Searches.

<b>Search Selection</b>	A drop-down menu to select any saved search for viewing and editing. The list of available searches is defined by the selected search group.
	Opens the <b>New/Edit Search</b> window to create a new search or search group. This window controls the name and description of the search or group.
	Opens the <b>New/Edit Search</b> window to edit a selected search or search group. This window controls the name and description of the search or group.
	Deletes the selected Search or Group.
	By clicking the minus or plus sign buttons, the search can be edited to contain more or less filters, which are connected by <b>AND/OR</b> operators. The  will open a new branch, while the  will close the existing branch.
	Opens the <a href="#">Analytical Functions</a> window that gives access to the <b>Info360 Functions</b> library as well as the ability to design a custom functional expression.

## Run Search

To run the currently selected Search on historic data, click the  button in the lower corner of the Search tab.

Run Search - Pressure out of bounds, 40 | 80

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**Data Source (\*)**

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**Data Interval (\*)**


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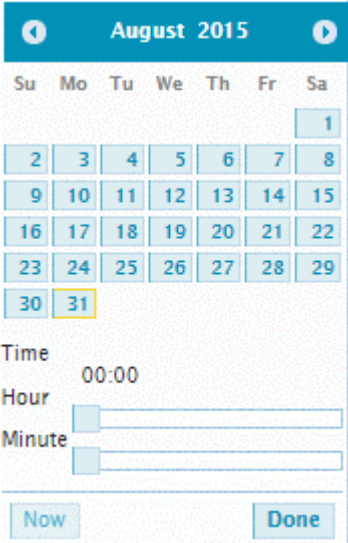
**Time Range**  to

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**Sensor Type**



Field	Description
<b>Data Source (*)</b>	This drop-down menu specifies either a specific sensor from which data will be searched, a sensor group, or a Mass Balance Zone. Note: By default, Info360 shows the first 1000 sensor listing. To show search results beyond the first 1000, enter a keyword and then click the search icon (indicated by the red search icon  ).
<b>Data Interval (*)</b>	This drop-down menu specifies the time interval at which data is queried. Using a larger interval enables efficient long-term searches, but any data points between the intervals will be neglected.

<b>Time Range</b>	<p>Specify the start and end time of historic data to be searched. Clicking in the box opens up a <b>Calendar Selection tool</b> to specify dates in the correct format.</p> 
<b>Sensor Type</b>	<p>This acts as an optional additional filter option to search only data from a certain sensor type. For example, a search could be applied to a sensor group including multiple sensor types; this field would restrict the sensor type within the group.</p> <p>The Sensor Type attribute is assigned to each sensor during the Sensor Data Configuration.</p>

## Search Results

Running the Search on data will produce a table of all the data points that satisfy the search criteria. The **Search Result** table shows all of the entries that satisfy all of the search criteria. Each row of the table shows the **Sensor ID** from which the data was taken, the **Date Time** at which the data entry occurred, the **Sensor Value** at that time, and any other fields that were calculated in the search.

Pressure out of bounds, 40   80 @ J50.Pressure			
Sensor ID	Date Time	Sensor Value	Sensor Value
J50.Pressure	2016-10-01 00:15:00	35	35
J50.Pressure	2016-10-01 02:15:00	82	82
J50.Pressure	2016-10-01 04:30:00	37	37
J50.Pressure	2016-10-01 05:45:00	82	82
J50.Pressure	2016-10-01 08:00:00	83	83
J50.Pressure	2016-10-01 08:30:00	82	82
J50.Pressure	2016-10-01 10:15:00	83	83
J50.Pressure	2016-10-01 11:45:00	36	36

## Track

The Track tab displays a table of all saved Tracks and their associated properties. Features allow for Tracks to be created, edited, cloned, deleted, or filtered by group.

The New/Edit Track window defines the properties of a Track, including the search that is used and which sensor/group is tracked.

## New/Edit Track

Track Name(\*):

Description:

Group:

[ALL]



Search(\*):

QTP269201917140



Data Source(\*):

Select a sensor



Data Interval(\*):

Daily



Sensor Type:



Alert Level (\*):

1



Associated Workspace:



Send Snapshot:

Invoke URL:

http://yoursite/SCADAWatchAlertReceiver/?SensorID={@SensorID}



Finish

Close

## Fields

Field	Description
Track Name (*)	Specifies the name of the Track.
Track Description	Optional description that appears in table of saved Tracks.
Group	Optional drop-down menu to associate the Track in a saved Track Group.
Search (*)	Drop-down menu to select the <a href="#">Search</a> that will be performed on the data.
Data Source (*)	Drop-down menu to select the data to be tracked; this can include individual sensors as well as sensor groups and <a href="#">Mass Balance Zones</a> .

<b>Data Interval (*)</b>	Drop-down menu to select the time interval at which the Track is applied to the data.
<b>Sensor Type</b>	Optional drop-down menu to filter sensors of a certain type from a sensor group. This option is only available when the Data Source is set to a sensor group.
<b>Alert Level (*)</b>	Drop-down menu to select the Alert Level to be used when the Tracking criteria is met. This will appear in the <a href="#">Alert Tab</a> and any <a href="#">Alert Dashlets</a> that are created.
<b>Associated Workspace</b>	Drop-down menu to select a Workspace to be associated with the Track. Any alert emails triggered by this Track will include a snapshot of the Workspace at the time of the event. This allows staff that receive and email/text to get a glimpse of what is going on in the system without needing to log in to Info360. Refer to New/Edit Schedule for information on setting up email alerts.
<b>Send Snapshot</b>	When checked, any alert emails triggered by this track will include a snapshot of the Associated Workspace.
<b>Invoke URL</b>	Allows you to invoke URL using the following supported parameters: {@SensorID} {@Expression} {@SensorValue} {@AlertLevel}

## Scheduler

The Scheduler page of the Track tab displays a table of all saved Schedules and their properties. Features allow for Schedulers to be created, edited, cloned, deleted, or filtered by group.

The **New/Edit Schedule** window defines the properties of a Schedule, including the Track that is used and the time schedule at which it is run.

**New/Edit Scheduler**

**Track(\*):**

**Group:**

**Run Type:**  One Time  Minutely  Hourly  Daily  Weekly  Monthly

**Run Every(\*):**  **Minutes**




**Contact List:**

**Contact Limit:** Send a maximum of  email/SMS in every 30 minutes.

**Active:**

## Fields

Field	Description
<b>Track (*)</b>	Drop-down menu to select from saved Tracks. The selected Track controls which data is searched and how it is monitored.

<b>Group</b>	Optional selection to assign Schedule to a group for organizational purposes.
<b>Run Type (*)</b>	Run Type selection controls the type of frequency to control how the schedule is run.
<b>Run Time (*)</b>	Controls time of day that the Track will be run. This field is only for Run Types: One Time, Daily, Weekly, and Monthly.
<b>Recur every (*)</b>	Controls the frequency that the Track will be run. The unit varies by Run Type and is posted to the right of the box.
<b>Contact List</b>	<p>Optional field to enter email addresses to receive any alerts produced by the scheduled Track.</p> <p>Contacts are organized in Contact Lists which can be saved with sets of emails and SMS email addresses.</p> <p>Contact List</p> <p>You can manage email addresses into Contact Lists.</p> <p>Select a contact List and Edit (  ) or create a new (  ) list:</p> <div style="border: 1px solid #ccc; padding: 10px; margin: 10px 0;"> <p><b>New/Edit Contact Group</b></p> <p><b>Contact Group Name(*):</b> <input type="text" value="Operators"/></p> <p><b>Contact Group Description:</b> <input type="text" value="People to be notified regarding pump operations"/></p> <p><b>SMS Carrier:</b> <input type="text" value="AT&amp;T"/></p> <p><b>SMS Number:</b> <input type="text" value="1112223333"/> @txt.att.net <input type="button" value="+Add to Contact List"/></p> <p><b>Contact List:</b> <input type="text" value="Operator_Joe@Innovyze.com; Operator_Sally@Innovyze.com; 1112223333@txt.att.net;"/></p> <p><input type="button" value="Finish"/> <input type="button" value="Close"/></p> </div> <div style="border: 1px solid #ccc; padding: 10px; margin: 10px 0; background-color: #e6f2e6;"> <p> <b>Tip:</b></p> <p>Most SMS Carriers provide domains that can be used to send an SMS/text via email. To send alerts via SMS, enter the 10 digit cell phone number followed @(domain). See example above.</p> </div>
<b>Contact Limit</b>	Drop-down menu to select a maximum number of emails sent per 30 minute period so that an email inbox is not flooded.
<b>Active</b>	Toggle switch to activate/deactivate the Schedule.

## Alerts

The Alert tab displays a table of all current alerts.

The list of alerts can be filtered by several properties to quickly understand the alerts occurring in the system.

Feature	Description
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**Alert Filter**

Click **Alert Filter...** to open the filter window with optional filter categories.

Any filter categories can be combined, returning alerts that satisfy all active filters.

Categories include the following:

- **Track** - Allows you to select the Track that you want to create an alert from.
- **Sensor** - Allows you to define the sensor ID.
- **Sensor Type** - Allows you to specify the particular sensor type.
- **Email** - Allows you to select from **Issued** or **Not Issued**.
- **Status** - Allows you to select from **Handled** or **Closed**.
- **Owner** - Allows you to specify the owner of the Alert.
- **Alert Level** - Allows you to specify the alert level from one through five.
- **Time Range** - Allows you to define the time range for the Alert.

Alert Filter

Track:

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Sensor:

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Sensor Type:

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Email:

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Status:

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Owner:

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Alert Level:

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Time Range:  to

**Link to Map**

Click the Sensor ID to switch to the Map tab and zoom to the sensor associated with the alert.

**Comments**

Comments can be added to each alert for review by others.

**Status**

Each Alert can have a status of **Unhandled** or **Closed**. Click an Unhandled status to change it to closed.

**Delete**

Alerts can be deleted individually using the  button, or the entire list can be cleared by clicking