

FactoryTalk Alarm & Events

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FactoryTalk Alarms and Events

Overview

The "FactoryTalk Alarms and Events" option provides a means of connecting directly to Rockwell's FactoryTalk Services. The WIN-911 direct-connect interface to FactoryTalk facilitates access to alarms generated by FactoryTalk Alarm and Events. This means the alarms are configured and generated at the PLC level and not by WIN-911.

Multiple data sources can be configured for FactoryTalk Alarms and Events. This allows the user to connect to multiple applications as well as configure separate Event Subscription parameters. FactoryTalk Alarms and Events supports the ability to reconnect to FactoryTalk Services if it ever loses its connection.

FactoryTalk Alarms and Events does not support an import of tags. Tags can only be subscribed to through Filter Tags.

Note: The FactoryTalk Alarms and Events ONLY supports Alarm tags.

Note: The FactoryTalk Alarms and Events does not yet support the following: WIN-411 reporting; Bypass; ALARM OFF command and SUPPRESS command from FactoryTalk View.

FactoryTalk Alarms and Events supports watchdog timers. FactoryTalk Alarms and Events watchdog timers can be configured in two ways. WIN-911 must monitor a changing alarm condition as opposed to a changing data value. In this case the watchdog timer would be set to value greater than the interval of the reoccurring alarm condition. You can also use a FactoryTalk Alarms and Events watchdog timer to monitor the connection to the FactoryTalk A & E server. This will only report an alarm if WIN-911 loses its connection with FactoryTalk. Both watchdogs have the ability to return to the normal condition.

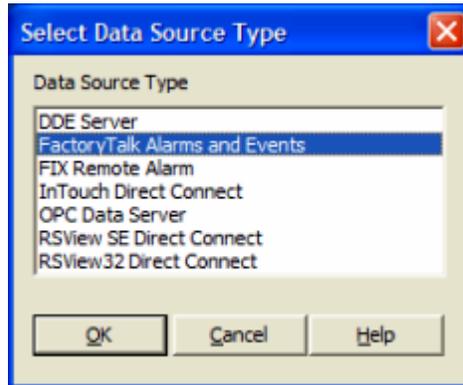
FactoryTalk Alarms and Events supports Filter tags. Filter tags allows WIN-911 to subscribe to alarm events according to a configured filter. The FactoryTalk Alarms and Events filter supports Alarm Name, Alarm Class, and Severity. This expidites the WIN-911 alarm configuration process.

The FactoryTalk Alarms and Events tag properties are configured at the PLC level making all properties dynamic with respect to WIN-911. This means that a tag can be reconfigured in FactoryTalk and those changes are automatically reflected in WIN-911.

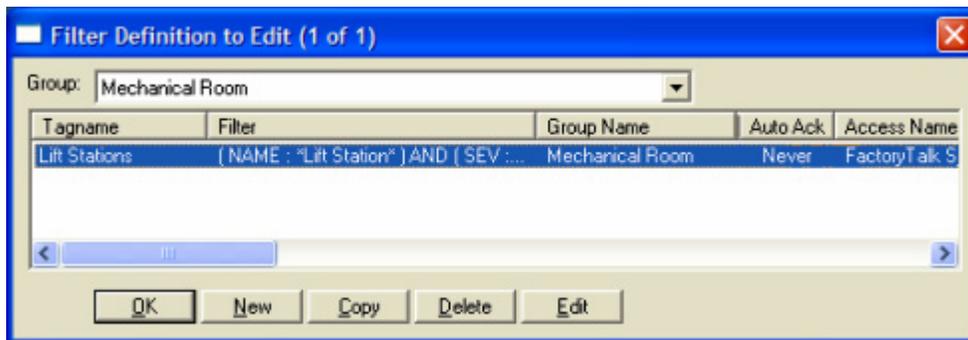
Note: The FactoryTalk alarm message is used as the alarm's description.

FactoryTalk assigns one of four Priorities to Alarms: Urgent, High, Medium, Low. WIN-911 can subscribe to FactoryTalk alarms based on the Priority. Priorities are configured at the data source level. Any FactoryTalk Alarms configured outside the selected Priorities will be ignored by WIN-911. All Priorities are selected by default. FactoryTalk also assigns Severities to alarms, ranging from 1 (least severe) to 1000 (most severe). Severities are configured at the tag level in the Filter Tag definition.

Data Source Definition



FactoryTalk Alarms and Events can be configured with multiple FactoryTalk data sources. When a FactoryTalk Alarms and Events data source is selected, the FactoryTalk Data Source Settings window is opened. Once the Connection Settings and Event Subscription forms are filled out the data source is created. The FactoryTalk Data Source Settings dialog can be used to filter alarms. The Filter Definition is also enabled when a FactoryTalk Alarms and Events data source is defined.



FactoryTalk Data Source Settings

Event Subscription

The "Event Subscription" specifies which FactoryTalk alarm events are sent to WIN-911 by the FactoryTalk Alarm and Events server. Events that match the subscription criteria will generate alarms in WIN-911. The user is able to specify three criteria: Priority, Area/SubArea and Event Sources. The three criteria are described in detail below.

Priority

The alarm "Priorities" are selected using the corresponding check boxes. Only those events whose priority is selected here will be sent to WIN-911. By default all priorities are checked.

Note: WIN-911 does not support all combinations of Priorities. The four unsupported case are: Urgent & Low only; High & Medium only, High & Low only, and Urgent & Medium only.

Area/SubArea

Only those events whose Area/SubArea match the criteria will be sent to WIN-911. By default all areas are specified.

Event Sources

Only those events whose source match the criteria will be sent to WIN-911. By default all sources are specified

Note: It is possible to configure an Event Subscription that doesn't subscribe to a single alarm.

Connection Settings

All Connection Settings can be found in both FactoryTalk View Studio and FactoryTalk Administration Console.

Access Name

The "Access Name" is a user defined name used to represent this particular data source.

Application

The "Application" is the name of an application configured in FactoryTalk View. If FactoryTalk Services is installed the WIN-911 Configurator will try to connect to the application name in order to verify it exists.

FactoryTalk Global Options

The Factory Talk Global Options are applied to ALL FactoryTalk sources. This means that only one Directory Scope can be configured and only one User Name and Password can be configured. If the Directory Scope, User Name or Password is changed in any configured FactoryTalk data source, all FactoryTalk data sources will use those settings. If FactoryTalk Services is installed the WIN-911 Configurator will verify that the Global Options configured exists.

Directory Scope

Every FactoryTalk View Application is configured with a "Directory Scope". A stand-alone application is configured as "Local". Distributed or networked applications are configured as "Network."

FactoryTalk User & Password

The "FactoryTalk User Name" and "Password" are configured here. This information can be found in the FactoryTalk Administration Console.

Ignore Bad and Uncertain Events

Select this check box to prevent the alarming and logging of bad or uncertain events. This can significantly reduce the amount of activity WIN-911 processes.

Note: This is a global option that affects all FactoryTalk AE tags.

Alarm Filters

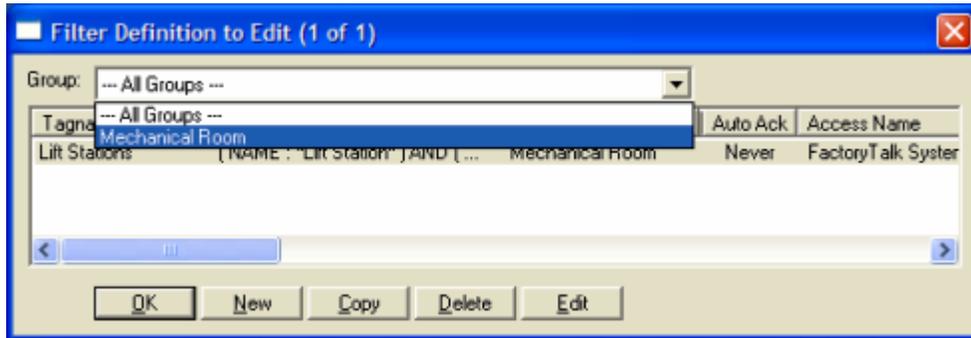
Filter Definitions



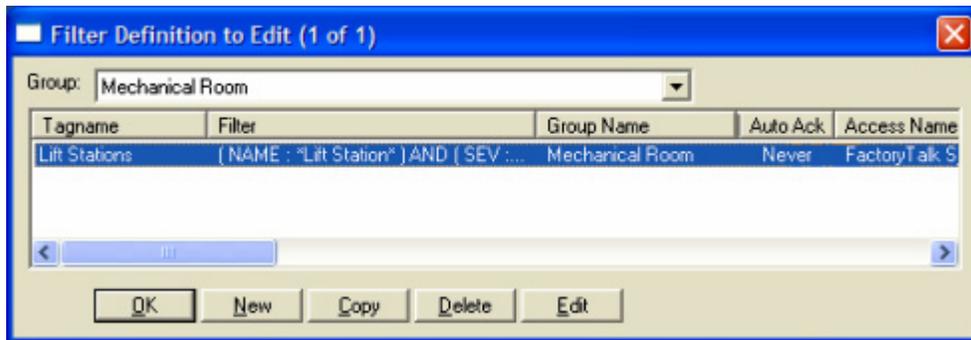
This button is used to define filter tags. Filter tags subscribe to alarms on the fly depending on the criteria configured. Filter tags are configured using this button.

Filter Definition to Edit

Alarms are arranged by Groups. Using the pull down list box, select the Group that the new or existing alarm belongs. Only the Filter tags associated with the Group will be listed. You may select the appropriate "Group" by the pull-down list box, or select All Groups.



After selecting the specific Group or selecting All Groups, you are ready to add or modify filter tags.



Selecting New, Edit or double-clicking on the Filter Tag will bring up the Filter Definition window.

Filter Definition

Selections must be made for the user defined tagname, the filter criteria, group selection, as well as acknowledgement choices. Each choice is described below.

Base Definition

Filter Definition

Base Definition

Tagname: Lift Stations

Filter: (NAME : *Lift Station*) AND (SEV : 600<=>1000)

Edit Filter

Group Name: Mechanical Room

Data Source

Access Name: FactoryTalk System

Automatic Acknowledgement

Never On Alarm On Return To Normal

OK Cancel Help

Tagname

The WIN-911 Filter Tagname allows the user to assign names to a filter tag or group of tags that are created by the tags filters and properties. It should be kept in mind that this is WIN-911's name for the filter alarm point or points, not FactoryTalk View's.

Filter

Filter: (NAME : *Lift Station*) AND (SEV : 600<=>1000)

Edit Filter

The FactoryTalk Alarms and Events Filter allows you to subscribe to a specific set of alarms. This can be done by clicking the Edit Filter button. The Edit Filter button opens up the FactoryTalk Filter Editor window. Here the user can configure the Alarm Name filter, Alarm Class filter and Severity filter. See the section titled "FactoryTalk Filter Syntax" for more details.

Group Name

Alarms are organized by groups for reporting out-of-tolerance conditions. You have by now created a filter tag. You must choose a predefined Group to specify the reporting actions for this alarm. See the section titled

Group Definition" for more details. To select another Group, click on the drop-down arrow with the cursor and choose. You may change the Group assignment (move the tag to another group) simply by selecting another defined Group from the drop down list box.

Access Name

The Access Name is used to select a predefined FactoryTalk Alarms and Events server from the list defined in the data sources. This field must be defined.

Automatic Acknowledgement

Never

Selecting this radio button will require a manual acknowledgement of the alarm.

On Alarm

Selecting this radio button will cause the alarm to automatically become Acknowledged as it enters into an alarm condition. This option would allow local reports (e.g. audio, printing, and logging) of an alarm's current condition without initiating remote reporting options (e.g. voice, SMS, etc.) listed in the Group. If this option is active, the message (going into an alarm condition) will not generate Pop-Up alarm messages or any of the remote notification options.

On Return To Normal

Selecting this radio button will cause the alarm to automatically acknowledge as it returns to the normal condition. This option precludes the need for human interaction if no one has acknowledged the alarm at the time it returns to a normal condition.

Filter Syntax

The "FactoryTalk Filter Editor" dialog box allows the user to filter a specific alarm or group of alarms for alarm notification. All alarms that make it past the FactoryTalk Data Source "Event Subscription" filter are then further qualified by the three filters (Filter on Alarm Name, Filter on Alarm Class and Filter on Alarm Severity) seen on this dialog. Only alarms being passed through the FactoryTalk Data Source "Event Subscription" filter (configured in the FactoryTalk Data Source Settings) will be effected by the FactoryTalk Filter(s).

Filter on Alarm Name

The "Filter on Alarm Name" can be toggled on/off using the checkbox. If the checkbox is checked, the user can define a filter based on the alarms' name. The Alarm Name filter can contain up to 140 characters. This filter will omit all alarms that do not match the name defined. No double quote characters (") are accepted. The filter also honors two wildcard characters, asterisk (*) and question mark (?). The asterisk (*) symbol is a wildcard character representing any valid character string. The question mark (?) symbol is a wildcard representing any valid single character.

A filter defined with an asterisk (*) will subscribe to all tag names. A filter defined with six question marks (??????) will subscribe to all tag names containing exactly six characters. A filter defined with a tag name and an asterisk ("Liftstation*") will subscribe to all alarms whose name starts with "Liftstation " (including space character).

Filter on Alarm Class

The "Filter on Alarm Class" can be toggled on/off using the checkbox. If the checkbox is checked, the user can define a filter based on the alarm class. The alarm class filter can contain up to 50 characters. This filter will omit all alarms that do not exactly match the alarm class defined. No double quote characters (") are accepted. The filter also honors two wildcard characters, asterisk (*) and question mark (?). The asterisk (*) symbol is a wildcard character representing any valid character string. The question mark (?) symbol is a wildcard representing any valid single character.

A filter defined with an asterisk (*) will subscribe to all alarm classes. A filter defined with six question marks (??????) will subscribe to all alarm classes containing exactly 6 characters. A filter defined with an alarm class and an asterisk ("Class12*") will subscribe to all alarms whose alarm class begins with "Class12."

Filter on Alarm Severity

The "Filter on Alarm Severity" can be toggled on/off using the checkbox. If the checkbox is checked, the user can define a filter based on the alarm severity. This filter will omit all alarms that do not fall within the alarm severity range. The alarm severity range is configured by typing in a MIN and MAX value. The MIN and MAX values can range from 1 to 1000 where the MIN value must be less than or equal to the MAX value. MIN and MAX values are included in the range.

Note: It is possible to configure a Filter that filters all possible alarms.

Watchdog Timer Definitions

Editing Watchdogs



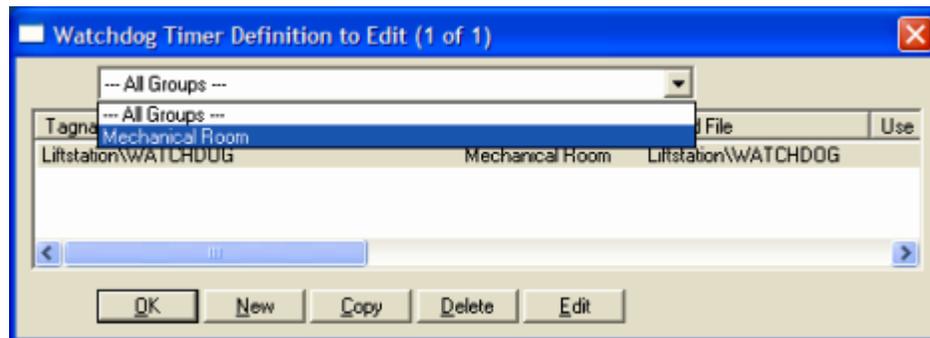
The integrity of mission critical data such as that which WIN-911 is tasked to monitor must be verifiable. This means that the data servers must have a way to demonstrate their presence and functionality. WIN-911 provides the user with Watchdog Timers for this very purpose. This function monitors one or two things (user definable) to ensure data and/or servers are healthy: 1) observe a changing alarm condition that is guaranteed to cycle at a specified rate, or 2) a message from FactoryTalk Services indicating a loss of alarm information.

Note: Unlike other WIN-911 Watchdog functions, the FactoryTalk Alarms and Events Watchdog monitors a changing alarm condition rather than a changing value.

To utilize the Watchdog Timer setup a data point that is continuously cycling in and out of alarm condition. A typical voice message for this condition could be: "WARNING AREA #4 HAS LOST COMMUNICATIONS WITH ALARM LOGGER."

Watchdog Timer Definition to Edit

Alarms/Points are arranged by Group. Using the pull down list box, select the Group to which the new or existing watchdog alarm is assigned. Only the watchdogs associated with the Group will be listed. You may select the appropriate Group from the pull-down list box, or select All Groups.



After selecting the specific Group or selecting All Groups, you are ready to add or modify watchdog timer alarms.

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Selecting New, Edit or double-clicking on the Tagname will bring up the Watchdog Timer Definition sheet.

Base Definition

The screenshot shows the 'Watchdog Timer Definition' dialog box. It has three tabs: 'Base Definition', 'Alarm Conditions', and 'Sounds'. The 'Base Definition' tab is selected. The fields are as follows:

- Tagname: Liftstation\WATCHDOG
- Description: (empty)
- Group Name: Mechanical Room
- Data Source: (empty)
- Access Name: FactoryTalk System
- Use Tagname for Item
- Item Name: Liftstation\WATCHDOG

Buttons for OK, Cancel, and Help are located at the bottom of the dialog.

Tagname

The tagname is an alias of the Watchdog tag in the FactoryTalk's Alarm & Event server. This is a user friendly name for the alarm and not the address of the A&E Watchdog tag.

Description

The Description Field is used to provide a more detailed description of a watchdog alarm. This information is in addition to the Tagname and Group Name. It is best not to include the Tagname or alarm Group Name in this description, since it is redundant.

Group Name

Alarms are organized by groups for reporting alarm conditions.

You have by now created a unique Watchdog alarm. You must choose a predefined Group to specify the reporting actions for this alarm. See the section titled "Group Definition" for more details. To select another Group, click on the drop-down arrow with the cursor and choose. A review of the Group button is not a bad idea here. To select another Group, click on the drop-down arrow with the cursor and choose.

You may change the Group assignment simply by selecting another defined "Group" from the drop down list box.

Access Name

FactoryTalk Alarm & Events

The Access Name is used to select a predefined FactoryTalk Alarms and Events server from the list defined in the data sources. This field must be defined.

Tagname for Item

Selecting this box will cause the Tagname to be copied directly into the item name. This check box is intended to be a time saving mechanism that can be utilized when the Tagname and Item Name are not required to be different.

Item Name

The Item Name is used to identify the particular item to monitor via FactoryTalk Alarm and Events. This field is case sensitive and must be defined.

For FactoryTalk A&E watchdogs, you must specify three components: Area Name, A&E Server Name, and the A&E Tag. The correct syntax for this is:

AreaName:A&EServerName:Tag

-- e.g.,--

Area1:Samples Water AE Alarms:AEWatchdog

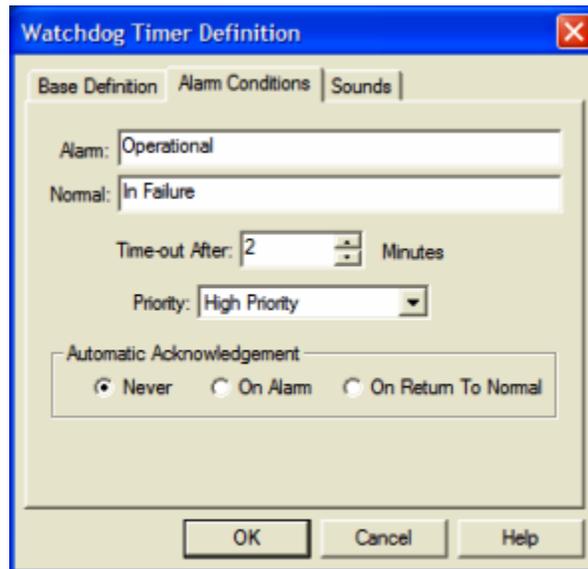
If the A&E Server is located on the Root Area, only the A&E Server name and the A&E Tag are required. The correct syntax for this is:

:A&EServerName:Tag

-- e.g.,--

:Samples Water AE Alarms:AEWatchdog

Alarm Conditions



Alarm and Normal

The Alarm Conditions text identifies the normal and alarm conditions that appear on the alarm monitor displays and reports.

Time-out After __ Minutes

The Time-out After __ Minutes field is a count down timer preset. Each time a new alarm state is reported for the selected item, the counter is reset to the preset value. If the timer ever counts down to zero, the alarm occurs. This entry is in one-minute increments.

If a value of 0 minutes is configured in the field, the Watchdog alarm will be triggered by a loss of communication with the data source. e.g. Project Stop, exit, etc. Since, the FactoryTalk Alarms and Events data source can re-establish communication with WIN-911, these Watchdogs can return to normal.

Priority

For each alarm, you may select three levels of Priority: High, Medium, and Low. For each Group, a higher priority alarm will bump a lower priority alarm down the queue to call out, even if the lower priority alarm was first in line.

Automatic Acknowledgement

Never

Selecting this radio button will require a manual acknowledgement of the alarm.

On Alarm

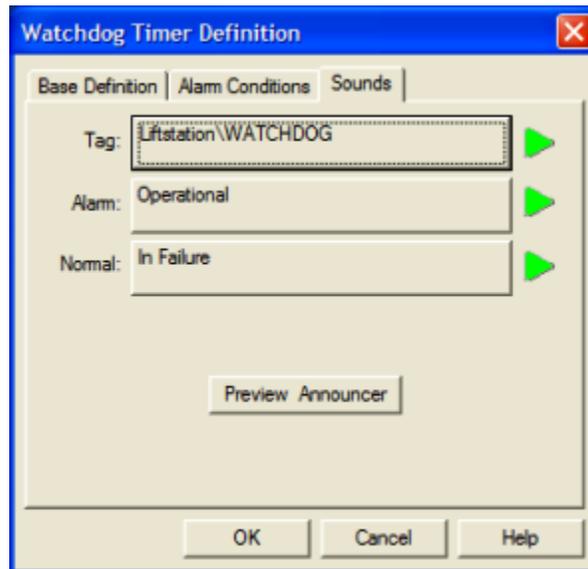
FactoryTalk Alarm & Events

Selecting this radio button will cause the alarm to automatically become Acknowledged as it enters into an alarm condition. This option would allow local reports (i.e. audio, printing, and logging) of an alarm's current condition without initiating remote reporting options (e.g. voice, SMS, etc.) listed in the Group. If this option is active, the message (going into an alarm condition) will not generate Pop-Up alarm messages or any of the Dial-Out options.

On Return To Normal

Selecting this radio button will cause the alarm to automatically acknowledge as it returns to normal.

Sounds



Tag, Alarm, and Normal Sounds

Like other WIN-911 alarms, the "Sounds" are essentially a verbalization of the description, and the Alarm and Normal text to be used in the audio annunciation. As with any other sounds, the sounds are selected from a dialog box.

Preview Announcer

Selecting this button will allow the user to review the alarm's entire audio ... AS IT WILL BE HEARD IN THE LOCAL ANNOUNCER ... for each condition of the alarm.