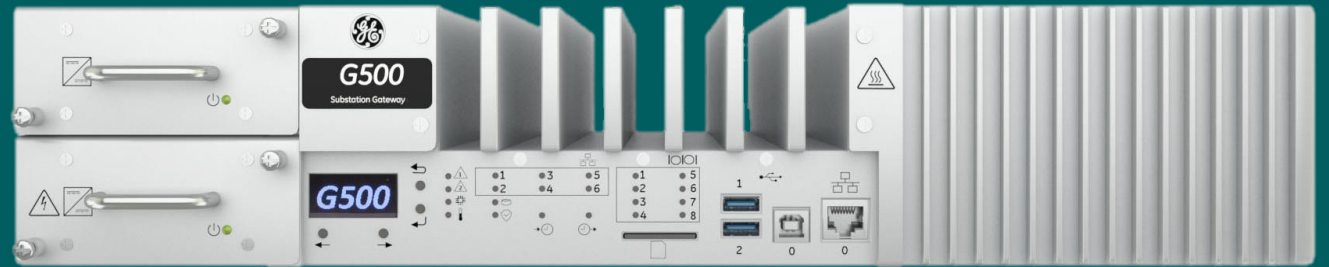


# 4000 - G500/G100 ALARM



## Learning Module Objective

At the completion of this module you will be able to identify and recite all concepts presented.

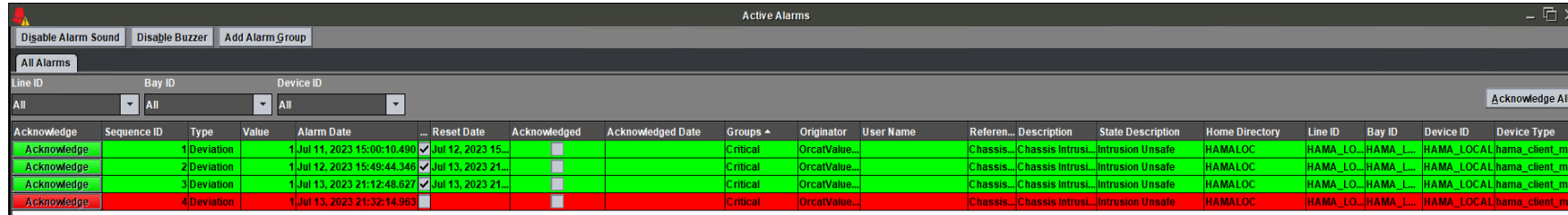
If you are viewing this as part of a structured training program *PLEASE* complete the associated assessment test. You are required to score above 80%.

Here's What is Covered in this Module

Learning & Development  
Module Overview

# ALARMS

Alarms are used to indicate the occurrence of an event that requires attention.



Acknowledge	Sequence ID	Type	Value	Alarm Date	Reset Date	Acknowledged	Acknowledged Date	Groups	Originator	User Name	Referen...	Description	State Description	Home Directory	Line ID	Bay ID	Device ID	Device Type
Acknowledge	1	Deviation	1	Jul 11, 2023 15:00:10.490	Jul 12, 2023 15:...	<input checked="" type="checkbox"/>		Critical	OrcatValue...		Chassis...	Chassis Intrusi...	Intrusion Unsafe	HAMALOC	HAMA_LO...	HAMA_L...	HAMA_LOCAL	hama_client_m...
Acknowledge	2	Deviation	1	Jul 12, 2023 15:49:44.346	Jul 13, 2023 21:...	<input checked="" type="checkbox"/>		Critical	OrcatValue...		Chassis...	Chassis Intrusi...	Intrusion Unsafe	HAMALOC	HAMA_LO...	HAMA_L...	HAMA_LOCAL	hama_client_m...
Acknowledge	3	Deviation	1	Jul 13, 2023 21:12:48.627	Jul 13, 2023 21:...	<input checked="" type="checkbox"/>		Critical	OrcatValue...		Chassis...	Chassis Intrusi...	Intrusion Unsafe	HAMALOC	HAMA_LO...	HAMA_L...	HAMA_LOCAL	hama_client_m...
Acknowledge	4	Deviation	1	Jul 13, 2023 21:32:14.963		<input type="checkbox"/>		Critical	OrcatValue...		Chassis...	Chassis Intrusi...	Intrusion Unsafe	HAMALOC	HAMA_LO...	HAMA_L...	HAMA_LOCAL	hama_client_m...

The MCP does not raise alarms on points that are offline

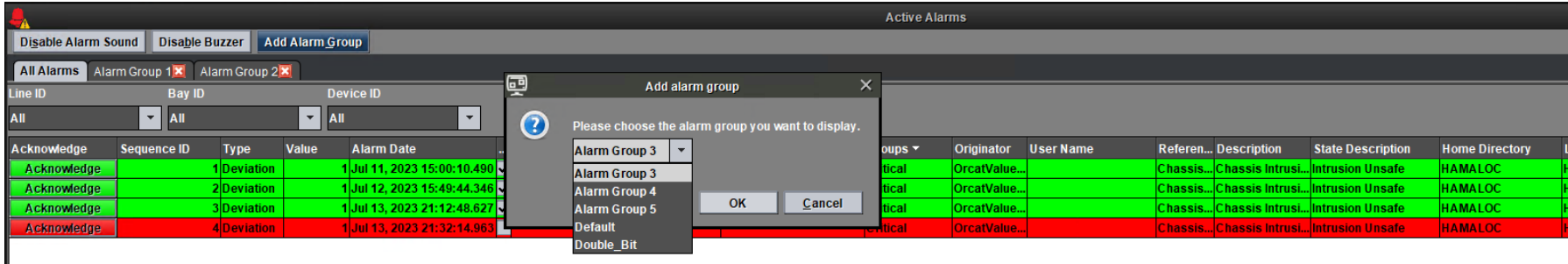
Abnormal source point conditions (such as, offline) are automatically translated into configurable alarm events, without the need of additional logic.

1. How MCP (G500/G100) manages alarms
2. The MCP Alarm functionality – Digital Event Management (DEM)
3. The MCP monitors a given set of digital input points for alarm conditions
4. Upon detecting an alarm condition, the MCP creates a record in the database and presents the alarm on the MCP Active Alarms page






# ALARM GROUP

Users can map individual source alarm into Alarm Groups, resulting in alarm grouping and alarm reduction.



- Additional alarm events occurring in a group already in alarm, causes the “re-flash” (pulsing) of a dedicated associated point associated with each group without additional logic being required.
- The time stamp of the alarm group output and re-flash points follow the time stamp event of the source point that caused the group change.

- All configuration information is applied to every point associated with the alarm group
- Alarm group indications are further grouped into a system alarm to indicate if any input point in the group is in an alarm condition

Alarm Groups							
Add/Delete Alarm Groups							
If all Alarm Groups are selected for Display in Alarm Viewer - the Active Alarms button in the Runtime HMI Power bar is color animated.   							
Group ID ▲	Group Reference	Group Description	Individual Alarm Indication	Display Scheme	Display In Alarm Viewer	Group Alarm Reflash Time(ms)	Pseudo Points
255	Critical	Critical Alarm Group	Disabled	Display_1	<input type="checkbox"/>	1,000	GroupUnAckRef-GrpCritic...
256	Default	Default Alarm Group	Disabled	Display_1	<input checked="" type="checkbox"/>	1,000	GroupUnAckRef-GrpDefau...
1	Alarm Group 1	Alarm Group1	Disabled	Display_1	<input checked="" type="checkbox"/>	1,000	Group UnAckRef 1, Group ...
2	Alarm Group 2	Alarm Group2	Disabled	Display_1	<input checked="" type="checkbox"/>	1,000	Group UnAckRef 2, Group ...
3	Alarm Group 3	Alarm Group3	Disabled	Display_1	<input checked="" type="checkbox"/>	1,000	Group UnAckRef 3, Group ...

# ALARM TYPES

## Deviation Alarms (2-state):

- Generates an active alarm when the point state changes from normal to alarmable

## On Update Alarms (2-state):

- Generates an active alarm when the alarm state changes from one state to another

## Double Point Alarms (4-state):

- An On Update Alarm is generated when the double point is in the transit state or in the invalid state and the state persists longer than the configured invalid period.
- A Deviation Alarm is generated when the double point is in the open state and is put in the reset state when the double point returns to the close state.

Digital points must already be configured in map files before they can be selected as alarmable points

You must select a pre-configured double point for double point alarms

# CONFIGURE ALARM POINTS

To Configure Alarm Points:

1. Run the DSAS Offline/Online Editor
2. Click the Alarm tab > Alarm Points tab
3. Click the tab for the type of alarm to be configured: Deviation Alarms, On Update Alarms, or Double Point Alarms
4. In the tree-view pane, expand the folders and click to select digital input points to add to the alarm list
5. To modify the default settings for an alarm point, in the alarm list, double-click a setting and enter a new value
6. Click Save to save the changes and Commit Changes

The Digital Event Manager does not support the “,” (comma) character in the Point, Point State, Alarm and Alarm State field descriptions. If the user has used commas in these field descriptions during configuration, the commas are automatically replaced with spaces at runtime.

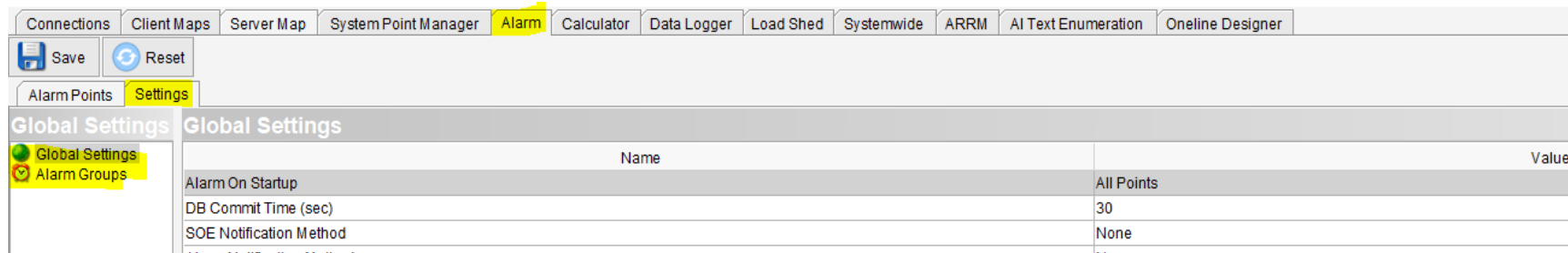
The screenshot shows the DSAS Alarm configuration interface. The 'Alarm' tab is selected, and the 'Deviation Alarms' sub-tab is active. A tree view on the left shows the 'Digital Input' folder expanded, with several points selected. The main area displays a table of configured alarm points.

Connection	Source Point	Source Description	Alarm Reference	Alarm Description	Text St...	Text State 1	Invalid State Desc	Alarmable State	Group	Originator
Calculator	F1	F1 Point Desc	F1 Alarm Reference	Feeder 1 Alarm Desc	TRIP	CLOSED	Off	0	BB 1	
Calculator	F2	F2 Point Desc	F2 Alarm Reference	Feeder 2 Alarm Desc	TRIP	CLOSED	Off	0	BB 1	
Calculator	F3	F3 Point Desc	F3 Alarm Reference	Feeder 3 Alarm Desc	TRIP	CLOSED	Last Reported	0	BB 2	
Calculator	F4	F4 Point Desc	F4 Alarm Reference	Feeder 4 Alarm Desc	TRIP	CLOSED	Last Reported	0	BB 2	
Demo 1   CUB...	N60_141Gen/Os...	Records are available	N60_141 OscRDRE1 Alarm...	Records are available Alar...	Off	On	Last Reported	1	BB 1, BB 2, Default	Process, Bay-Control
Demo 1   CUB...	N60_141Master/...	A123456789A12345678	N60_141 Ind001 Alarm Refer...	A123456789A123456789...	Off	On	Last Reported	1	Default	Bay-Control, Station...
Calculator	BB12	BB12 Point Desc	BB12 Alarm Reference	BB12 Alarm Desc	Off	On	Last Reported	1	RTDB_1, BB 1, B...	

# CONFIGURE ALARM SETTINGS/GROUP

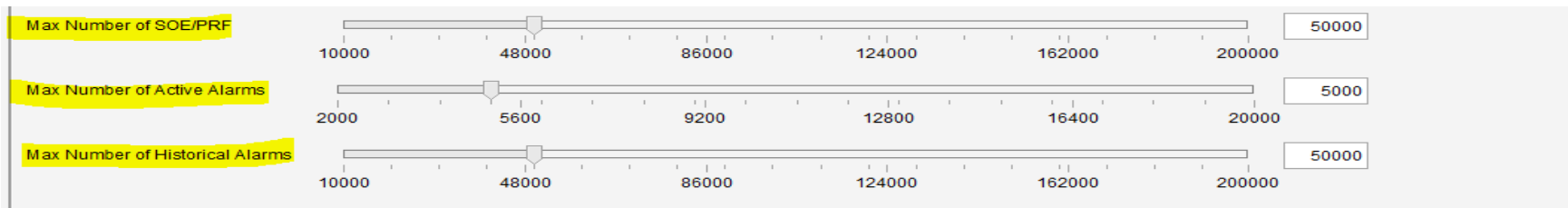
To Configure Global Settings or Alarm Groups:

1. Click the Alarm tab > Settings tab
2. Select Global Settings or Alarm Group
3. To modify the default settings, double-click a setting and enter a new value
4. Click Save to save your changes and Commit Changes



To Configure Maximum Number of Alarms:

In Systemwide tab under System ->Storage section. The slider options allow the User to configure maximum under of SOE/PRF, historical and active alarms that can be present in the system.



Any alarms assigned to a group that is deleted become unassigned and must be manually re-assigned to a different group.



# VIEW ACTIVE ALARMS

The Active Alarms page of Runtime HMI lists all active alarm events and automatically updates the display whenever the MCP generates a new alarm, or when the status of an existing alarm changes

By default, the alarms are listed with the most recent alarms appearing at the top of the list

Alarms assigned only to Groups set as non-visible at runtime will not show in the Active Alarms Page

The Active Alarms button on the Power bar visually indicates the status of active alarms in the MCP



- Blinking red when unacknowledged active alarms exist



- Steady green when no active alarms are present



- Steady yellow when acknowledged active alarms are present



- Always static GREY color if there are Alarms Groups configured as non-visible

# ACKNOWLEDGE AN ALARM

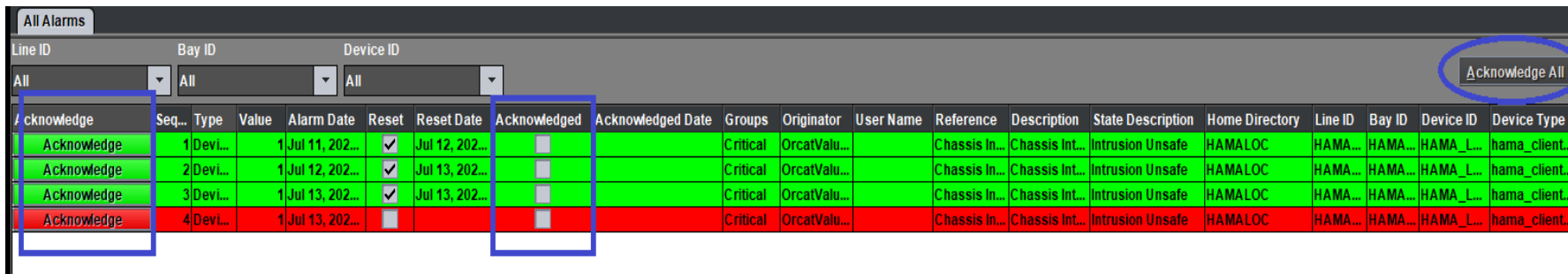
Alarms are acknowledged on the Active Alarms page.

To acknowledge an alarm:

- Select one or more alarms on the Active Alarms page
- Click Acknowledge Alarm(s)

To acknowledge all alarms in an alarm group:

- On an alarm group tab on the Active Alarms page, click Acknowledge Group



Line ID	Bay ID	Device ID	acknowledge	Seq...	Type	Value	Alarm Date	Reset	Reset Date	Acknowledged	Acknowledged Date	Groups	Originator	User Name	Reference	Description	State Description	Home Directory	Line ID	Bay ID	Device ID	Device Type
			Acknowledge	1	Devi...	1	Jul 11, 202...	✓	Jul 12, 202...	<input checked="" type="checkbox"/>		Critical	OrcatValu...		Chassis In...	Chassis Int...	Intrusion Unsafe	HAMALOC	HAMA...	HAMA...	HAMA_L...	hama_client...
			Acknowledge	2	Devi...	1	Jul 12, 202...	✓	Jul 13, 202...	<input checked="" type="checkbox"/>		Critical	OrcatValu...		Chassis In...	Chassis Int...	Intrusion Unsafe	HAMALOC	HAMA...	HAMA...	HAMA_L...	hama_client...
			Acknowledge	3	Devi...	1	Jul 13, 202...	✓	Jul 13, 202...	<input checked="" type="checkbox"/>		Critical	OrcatValu...		Chassis In...	Chassis Int...	Intrusion Unsafe	HAMALOC	HAMA...	HAMA...	HAMA_L...	hama_client...
			Acknowledge	4	Devi...	1	Jul 13, 202...			<input type="checkbox"/>		Critical	OrcatValu...		Chassis In...	Chassis Int...	Intrusion Unsafe	HAMALOC	HAMA...	HAMA...	HAMA_L...	hama_client...

When you acknowledge an alarm or alarm group:

- Acknowledge Indicator field is checked
- Acknowledged alarm record changes in foreground color, background color and blink rate as configured in alarm settings
- Acknowledged alarm record is moved from the Active Alarms page to the Historical Alarms page

You cannot remove an acknowledgement once an alarm has been acknowledged

Deviation alarms that are acknowledged continue to appear on the Active Alarms page until they return to a normal (non-alarmable) state.

Dynamic alarm objects can be acknowledged directly on a one-line diagram

# AUDIBLE ALARM / ALARM BUZZER

You can activate a sound to be played when a new alarm is received

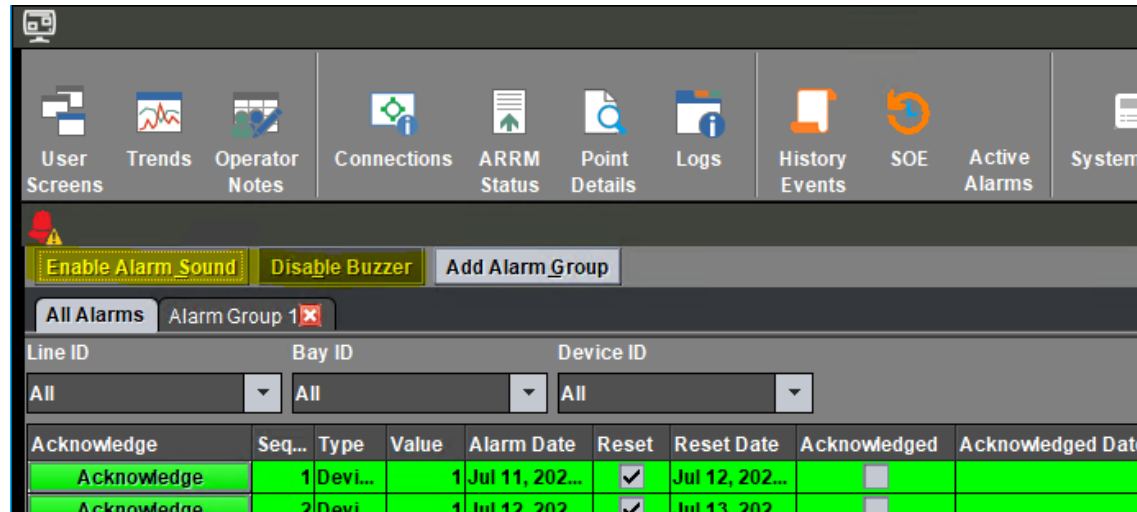
To enable or mute an audible alarm

- On the Active Alarms page, click Enable Alarm Sound or Disable Alarm Sound to toggle the audible alarm on or off

The buzzer on the device will be activated based on the configuration values. This buzzer can be activated or deactivated when a new alarm is received

To enable or mute buzzer

- On the Active Alarms page, click Enable Buzzer or Disable Buzzer to toggle the buzzer on or off



To hear audible alarms in the MCP HMI, the volume must not be muted in Windows PC. Check the Volume control on the Windows taskbar. Click the control to change the volume setting

If there are Alarm Groups configured as non-visible at runtime – then Audible Alarms and Buzzer cannot be enabled

# HISTORICAL EVENTS/ALARMS

A historical event is an alarm that has been archived from the Active Alarms list

To view historical events:

1. Click the Historical Events button on the Power bar. A new window opens.
2. All the available historical alarm records are shown.
3. You can save the records in CSV format by clicking the Export Data button.

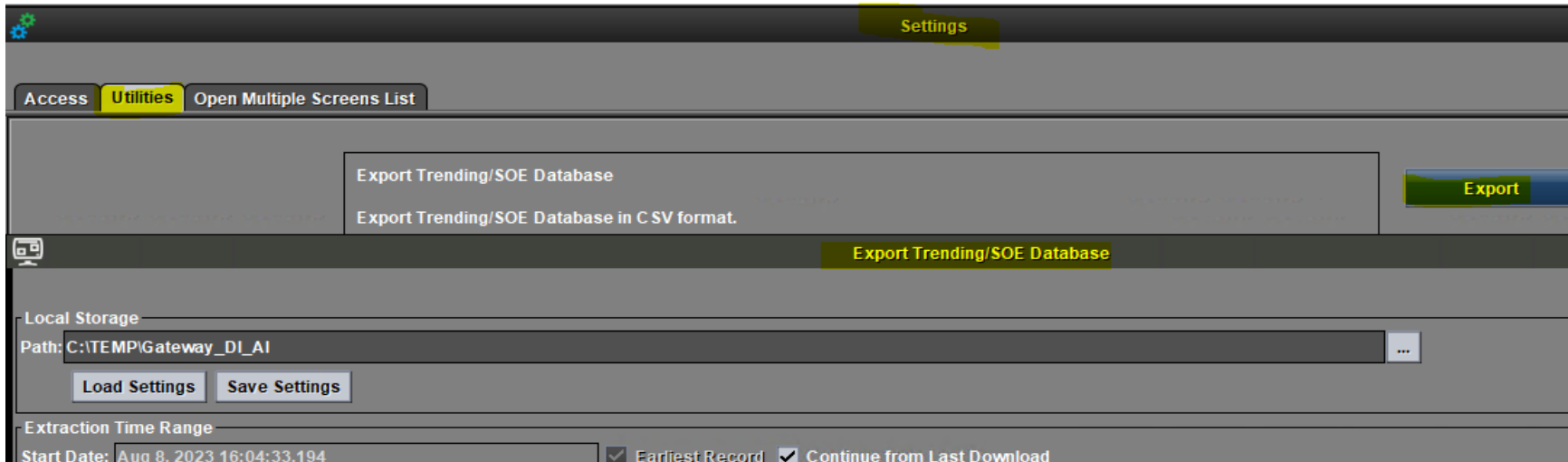
Right-click any column heading to customize the columns shown. You can also drag-and-drop column headings to re-order them horizontally

Sequ...	Alar...	Type	Val...	Alarm Date	Reset	Reset Date	Acknowledged	Acknowledged Date	Archived Date	Originator	User Name	Reference	Description	State Description	Home Directory	Line ID	Bay ID	Device ID	Device Type
7	18	Deviation	1	Feb 20, 2031 05:37:17.565	<input checked="" type="checkbox"/>	Feb 28, 2031...	<input checked="" type="checkbox"/>	Feb 8, 2023 10:13:35...	Feb 8, 2023 10:...	OrcatValue...	127.0.0.1-ad...	DI_03	DI 03	ON	0000003	Line 1	PCIe 3	D.20 IO 1	WesdacD20C...
6	16	Deviation	1	Feb 19, 2031 12:36:19.832	<input checked="" type="checkbox"/>	Feb 28, 2031...	<input checked="" type="checkbox"/>	Feb 8, 2023 10:13:35...	Feb 8, 2023 10:...	OrcatValue...	127.0.0.1-ad...	DI_02	DI 02	ON	0000003	Line 1	PCIe 3	D.20 IO 1	WesdacD20C...
5	14	Deviation	1	Feb 18, 2031 19:24:08.005	<input checked="" type="checkbox"/>	Feb 28, 2031...	<input checked="" type="checkbox"/>	Feb 8, 2023 10:13:35...	Feb 8, 2023 10:...	OrcatValue...	127.0.0.1-ad...	DI_01	DI 01	ON	0000003	Line 1	PCIe 3	D.20 IO 1	WesdacD20C...
4	16	Deviation	1	Dec 14, 2029 11:48:14.591	<input checked="" type="checkbox"/>	Dec 31, 202...	<input checked="" type="checkbox"/>	Feb 8, 2023 10:02:03...	Dec 31, 2029 0...	OrcatValue...	10.14.24.141...	DI_02	DI 02	ON	0000003	Line 1	PCIe 3	D.20 IO 1	WesdacD20C...
3	14	Deviation	1	Dec 11, 2029 18:18:04.297	<input checked="" type="checkbox"/>	Dec 31, 202...	<input checked="" type="checkbox"/>	Feb 8, 2023 10:02:03...	Dec 31, 2029 0...	OrcatValue...	10.14.24.141...	DI_01	DI 01	ON	0000003	Line 1	PCIe 3	D.20 IO 1	WesdacD20C...
46	26	Deviation	1	Oct 18, 2025 22:10:25.110	<input checked="" type="checkbox"/>	Oct 20, 2025...	<input checked="" type="checkbox"/>	Feb 8, 2023 10:37:09...	Feb 8, 2023 10:...	OrcatValue...	127.0.0.1-ad...	DI_06	DI 06	ON	0000003	Line 1	PCIe 3	D.20 IO 1	WesdacD20C...
45	22	Deviation	1	Oct 18, 2025 03:28:59.722	<input checked="" type="checkbox"/>	Oct 20, 2025...	<input checked="" type="checkbox"/>	Feb 8, 2023 10:37:09...	Feb 8, 2023 10:...	OrcatValue...	127.0.0.1-ad...	DI_05	DI 05	ON	0000003	Line 1	PCIe 3	D.20 IO 1	WesdacD20C...
44	20	Deviation	1	Oct 17, 2025 08:49:56.699	<input checked="" type="checkbox"/>	Oct 20, 2025...	<input checked="" type="checkbox"/>	Feb 8, 2023 10:37:09...	Feb 8, 2023 10:...	OrcatValue...	127.0.0.1-ad...	DI_04	DI 04	ON	0000003	Line 1	PCIe 3	D.20 IO 1	WesdacD20C...
43	18	Deviation	1	Oct 16, 2025 15:39:52.307	<input checked="" type="checkbox"/>	Oct 20, 2025...	<input checked="" type="checkbox"/>	Feb 8, 2023 10:37:09...	Feb 8, 2023 10:...	OrcatValue...	127.0.0.1-ad...	DI_03	DI 03	ON	0000003	Line 1	PCIe 3	D.20 IO 1	WesdacD20C...
42	16	Deviation	1	Oct 16, 2025 00:10:29.381	<input checked="" type="checkbox"/>	Nov 8, 2025 ...	<input checked="" type="checkbox"/>	Feb 8, 2023 10:37:09...	Feb 8, 2023 10:...	OrcatValue...	127.0.0.1-ad...	DI_02	DI 02	ON	0000003	Line 1	PCIe 3	D.20 IO 1	WesdacD20C...
41	14	Deviation	1	Oct 15, 2025 10:06:54.963	<input checked="" type="checkbox"/>	Nov 8, 2025 ...	<input checked="" type="checkbox"/>	Feb 8, 2023 10:37:09...	Feb 8, 2023 10:...	OrcatValue...	127.0.0.1-ad...	DI_01	DI 01	ON	0000003	Line 1	PCIe 3	D.20 IO 1	WesdacD20C...
40	28	Deviation	1	Oct 4, 2025 16:49:52.675	<input checked="" type="checkbox"/>	Oct 7, 2025 ...	<input checked="" type="checkbox"/>	Feb 8, 2023 10:37:09...	Feb 8, 2023 10:...	OrcatValue...	127.0.0.1-ad...	DI_08	DI 08	ON	0000003	Line 1	PCIe 3	D.20 IO 1	WesdacD20C...
39	24	Deviation	1	Oct 4, 2025 02:19:49.912	<input checked="" type="checkbox"/>	Oct 8, 2025 ...	<input checked="" type="checkbox"/>	Feb 8, 2023 10:37:09...	Feb 8, 2023 10:...	OrcatValue...	127.0.0.1-ad...	DI_07	DI 07	ON	0000003	Line 1	PCIe 3	D.20 IO 1	WesdacD20C...
38	26	Deviation	1	Oct 3, 2025 00:38:40.670	<input checked="" type="checkbox"/>	Oct 9, 2025 ...	<input checked="" type="checkbox"/>	Feb 8, 2023 10:37:09...	Feb 8, 2023 10:...	OrcatValue...	127.0.0.1-ad...	DI_06	DI 06	ON	0000003	Line 1	PCIe 3	D.20 IO 1	WesdacD20C...

# DELETE ALARM RECORDS

Use the DB Exporter tool on the Utilities page of the MCP HMI to save a backup of the SQL database tables, before deleting them

This “Delete Digital Event Data” action stops all running applications and restarts and permanently deletes entries from the digital events database



To delete SOE and Alarm records:

- Run “sudo mcpcfg” or open Settings GUI
- Choose 9. Reset Database Tables
- Then choose 1. Delete Digital Event Data: SOE and Alarm records

```
=====
Gateway Settings Menu
mSQL Tables
=====

WARNING: The Gateway applications will be stopped during
delete operations and restarted!!!

0. Back
1. Delete Digital Event Data : SOE and Alarm records
2. Delete Quality records
3. Delete PRF Event records
4. Delete Operator Note records
5. Delete Accumulator records

Enter Your Choice : ( Between 0 and 5 ): █
```

Thank you for having watched this educational material

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