



Calibration Management



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Chapter 1

Overview

Topics:

- [Overview of the Calibration Management Module](#)
- [Access the Calibration Management Overview Page for all Hierarchy Levels](#)
- [Access the Calibration Management Overview Page for a Particular Hierarchy Level](#)
- [About Instrumentation Systems](#)
- [Calibration Management Workflow](#)

Overview of the Calibration Management Module

The Calibration Management module lets you track the performance of certain Assets, such as instruments and analyzers, by evaluating the detailed results of the calibration events associated with those Assets.

Calibration Management provides tools that you can use to:

- Define the requirements of the calibration events. Calibration requirements are stored in Calibration Templates. These records store the number of test points, strategy, ranges, and the accuracy required for that defined calibration.
- Define a schedule on which calibration events should occur and audit changes to requirements and schedules. You can use Calibration Tasks to schedule calibration events on a regular basis or as a single event. You can integrate Calibration Tasks with an EAM system.
- Record and evaluate calibration event data. Calibration results are recorded in Calibration records (also called Calibration Events). Calibration Event families are provided for the following types of calibrations:
 - Analog
 - Discrete
 - Analyzers
 - Weight Scales
 - Functional Test
- The calibration results that are stored in Calibration records can be used to assess the overall performance of the asset and evaluate the optimal calibration frequency for that asset.

Access the Calibration Management Overview Page for all Hierarchy Levels

Before You Begin

- You can access the **Calibration Management Overview** page only if you are a member of one of the following Security Groups:
 - MI Calibration Administrator
 - MI Calibration User

You can perform the various tasks on this page based on [the privileges granted to these Security Groups](#).

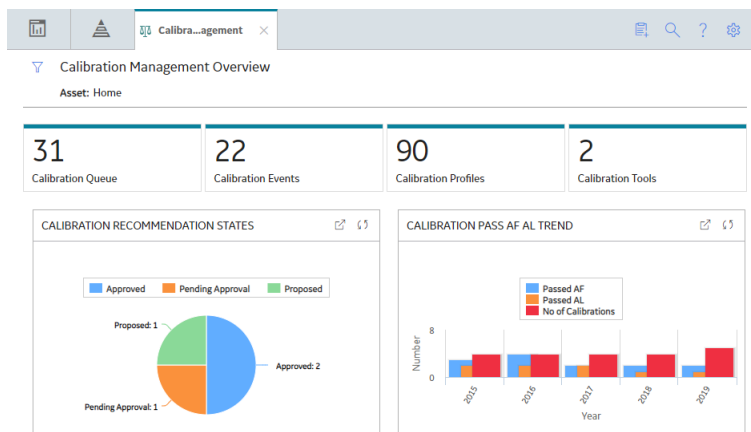
About This Task


This topic describes how to access the **Calibration Management Overview** page for all hierarchy levels. You can also [access the Calibration Management Overview page for a particular hierarchy level](#).

Procedure

In the **Applications** menu, navigate to the **HEALTH** section, and then select **Calibration Management**. The **Calibration Management Overview** page appears, displaying the following information for all the hierarchy levels:

- The **Calibration Recommendation States** graph: Plots the number of Recommendations based on their state.
- The **Calibration Pass AF AL Trend** graph: Plots the number of Calibrations that have passed as found, passed as left, and the percentage of completed Calibrations.
- The **Calibration Queue** section: Displays the list of pending Calibration Queue records that are yet to be sent for calibration. This section contains Calibration Events in progress or pending approval, and recurring Calibration Events. The number on the tab indicates the number of Calibration Queue records.
- The **Calibration Events** section: Displays the list of Calibration Events. The number on the tab indicates the number of Calibration records.
- The **Calibration Profiles** section: Displays the list of Calibration Profiles. The number on the tab indicates the number of Calibration Profiles.
- The **Calibration Tools** section: Displays the list of Test Equipments, Standard Gas Cylinders, and records not specific to an asset. The number on the tab indicates the total number of Test Equipment and Standard Gas Cylinders.



By default, the information that appears on the **Calibration Management Overview** page is related to all assets. It also includes profiles that have not been linked to any asset. To filter and view the information that appears on the tabs and charts for a specific asset, select  and then select the desired asset.

Access the Calibration Management Overview Page for a Particular Hierarchy Level

Before You Begin


- You can access the **Calibration Management Overview** page only if you are a member of one of the following Security Groups:
 - MI Calibration Administrator
 - MI Calibration User


You can perform various tasks on this page based on [the privileges granted to these Security Groups](#).

About This Task

This topic describes how to select a hierarchy level (an Equipment or a Functional Location), and then access the calibration information for that hierarchy level. You can also [access the Calibration Management Overview page for all hierarchy level](#).

Procedure

1. In the top navigation bar, select .
The **Asset Hierarchy** page appears.
2. In the left pane, navigate to the hierarchy level for which you want to access the **Calibration Management Overview** page.
A list of the types of analysis performed on the selected hierarchy level appears in the workspace, in the **Health** section.
3. In the section, in the **Calibration Management** row, select the link.
The **Calibration Management Overview** page appears, displaying the following information related to the selected hierarchy level:
 - The **Calibration Recommendation States** graph: Plots the number of Recommendations based on their state.
 - The **Calibration Pass AF AL Trend** graph: Plots the number of Calibrations that have passed as found, passed as left, and the percentage of completed Calibrations.
 - The **Calibration Queue** section: Displays the list of pending Calibration Queue records that are yet to be sent for calibration. This section contains a list of recurring calibration tasks and tasks associated with calibration events that are in progress or pending approval. The number on the tab indicates the number of Calibration Queue records.
 - The **Calibration Events** section: Displays the list of Calibration Events. The number on the tab indicates the number of calibration records for a selected asset.
 - The **Calibration Profiles** section: Displays the list of Calibration Profiles. The number on the tab indicates the number of calibration profiles for a selected asset.
 - The **Calibration Tools** section: Displays the list of Test Equipments, Standard Gas Cylinders and records not specific to an asset. The number on the tab indicates the total number of Test Equipment and Standard Gas Cylinders and are not specific to an asset.

The **Calibration Management Overview** page contains information related to a selected asset. To filter and view the information that appears on the tabs and charts for a specific asset, select  and then select the desired asset.

About Instrumentation Systems

As part of process hazard analysis (PHA), it is important to identify safety instrumented functions (SIFs) and other independent protection layers (IPLs). Features that are designated as IPLs (including SIFs) are treated as Safety Critical, Business Critical, or Mission Critical. Typically, the calibration schedule for such loops is managed at the loop or system level. To facilitate and manage the calibration data for a group of assets more efficiently, the Instrumentation System (IS) functionality is added in the Calibration Management module. Instrumentation Systems can be created against a higher-level Functional Location such that you are able to add assets beneath that Functional Location. The Instrumentation Systems functionality helps you define, manage, and review the calibration schedule (tasks) and reporting (events) at a system or an instrumentation loop level.

You can define an Instrumentation System and associate it to a parent asset, which represents the entire system or group. Related assets that are part of the system/group can be added as child assets. You can

define a Calibration Task for the parent asset and the scope of the calibration to be performed for the entire system, and then proceed to calibrate the assets. After the calibrations are completed for the defined scope, the overall calibration result for the Instrumentation System is displayed.

Calibration Management Workflow

This workflow provides the basic, high-level steps for using this module. The steps and links in this workflow do not necessarily reference every possible procedure.

To calibrate an asset:

1. Identify the asset that you want to calibrate.
2. Identify the tool (test equipment or standard gas cylinder) that you will use to perform calibration. To do so, for each piece of test equipment, you will need to [create a Test Equipment](#), which stores details about the piece of test equipment, including whether or not the piece of test equipment is certified. If you will use a standard gas cylinder, you must [create a Standard Gas Cylinder](#), which stores the details of the cylinder and its components.
3. Define the type of calibration that you will perform. To do so, create a Profile Template for [automated calibration](#) or [manual calibration](#).
4. [Create a Calibration Profile](#) to group all the Assets that will use the template that you have created.
5. [Apply the Calibration Template to an Asset](#). GE Digital APM creates a copy of the template (called an Applied Profile), and links it to the Asset.
6. Define the schedule on which you will perform the calibration. To do so, [link a Calibration Task](#).
7. If you are performing an automated calibration, [send the templates to the calibrator](#).
8. Perform the calibration. If you have performed an automated calibration, [receive data from the calibrator](#).
9. Create a new Calibration to store the details of the calibration. You can create a Calibration either [from the Calibration Queue section](#). If you are performing an automated calibration, then GE Digital APM automatically creates a Calibration for each calibration that you have performed.
10. [Send the Calibration for approval](#).
11. Evaluate the calibration results using the reports and graphs in Calibration Management and other GE Digital APM modules.
12. [Approve or reject the Calibration](#). You can do this only if you are a member of the MI Calibration Administrator group.
13. [Propose a Recommendation](#).

Chapter 2

Workflows

Topics:

- [Calibration Planning](#)
- [Instrumentation System Planning Workflow](#)
- [Calibration Administration](#)
- [Calibration Assessment](#)
- [Calibration Assessment CMX](#)

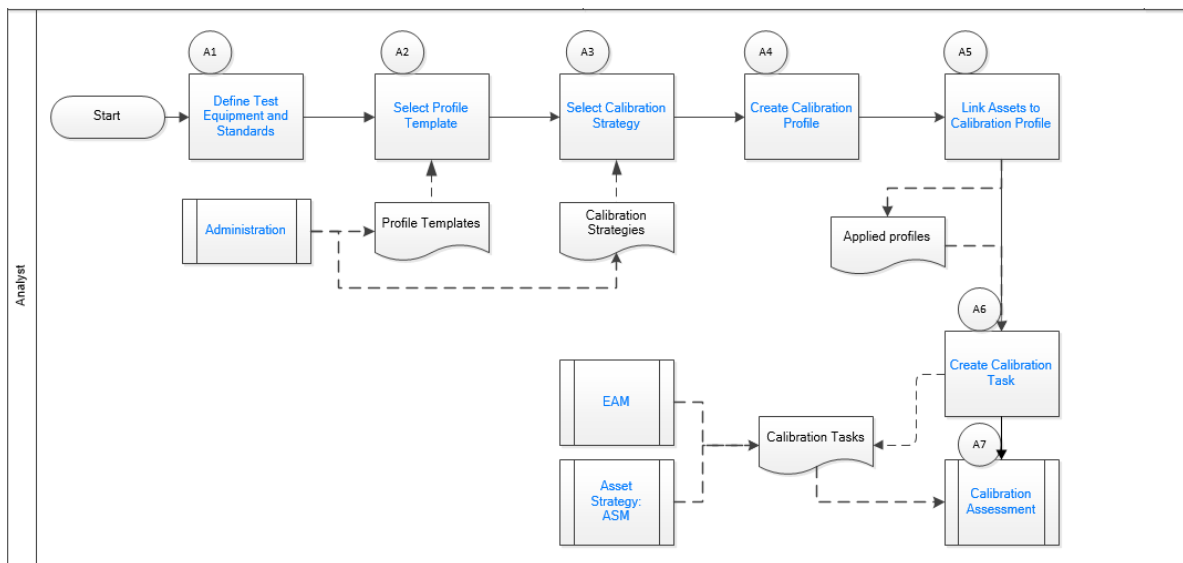
Calibration Planning

Calibration Management: Calibration Planning Workflow

This workflow describes the planning process involved in conducting calibration, including setting up the required tools (i.e., test equipment, standards, engineering design information), defining the strategy, and scheduling the calibration.

In the following workflow diagram, the blue text in a shape indicates that the corresponding description has been provided in the sections that follow the diagram. For more information, refer to the [Interpreting the Workflow Diagrams](#) topic in the [APM Product Workflows](#) documentation.

Note: For information on the personas associated with a GE Digital APM module, refer to the [APM Product Workflows](#) documentation.



Define Test Equipment and Standards

Persona: Analyst

Identify the tools (i.e., Test Equipment such as documenting process calibrators and Standard Gas Cylinders) needed to perform the calibration. Standard Gas Cylinders are used to calibrate single component and multi-component analyzers. Gather the necessary engineering design information for an asset that you want to calibrate. This is required to develop a calibration strategy, and to ensure that you adhere to regulatory compliance.

Define Calibration Defaults

Persona: Analyst

Define the error limits and the type of error assessment to be used for each type of calibration. These details are stored in a Calibration Setup Defaults record.

Select Profile Template

Persona: Analyst

Select a Profile Template for a specific type of calibration.

Administration

Persona: Analyst

Select the strategy for the template type to specify the strategy that will be used in a Calibration Profile.

Go to the [Calibration Administration workflow](#).

Select Calibration Strategy

Persona: Analyst

Select the strategy for the template type to specify the strategy that will be used in a Calibration Profile.

Go to the [Calibration Administration Workflow](#).

Create Calibration Profile

Persona: Analyst

Create a Calibration Profile to group all the Assets that you want to calibrate using a single template. Provide a unique name for the profile, and link a Profile Template.

Link Assets to Profile Template

Persona: Analyst

Link the Calibration Profile to Assets that you want to calibrate using a single template. For each Asset that you have linked to the profile, GE Digital APM creates a copy of the template. The Asset and the template (copy) combination is called the Applied Profile. If needed, you can modify the asset-related information in the applied profile.

Asset Strategy Management (ASM)

Persona: Analyst

GE Digital APM Asset Strategy Management (ASM) software module. The ASM module is available in GE Digital APM and the appropriate license of ASM is required.

Go to the [Asset Strategy Management Workflow](#).

Enterprise Asset Management (EAM)

Persona: Analyst

Enterprise Asset Management (EAM) software (i.e., SAP, Maximo). The EAM software is a third-party software and not a part of GE Digital APM.

Go to the [EAM Work Management: Work Order Generation Workflow](#).

Create Calibration Task

Persona: Analyst

Create a Calibration Task to specify the schedule for performing the calibration and to assign the task to a user. This Calibration Task is linked to the Asset and the Template combination (called the Applied Profile).

The Calibration Task is listed in the **Calibration Queue** section of the **Calibration Management Overview** page.

Perform Calibration Assessment

Persona: Analyst

Go to the [Calibration Assessment](#) Workflow.

Instrumentation System Planning Workflow

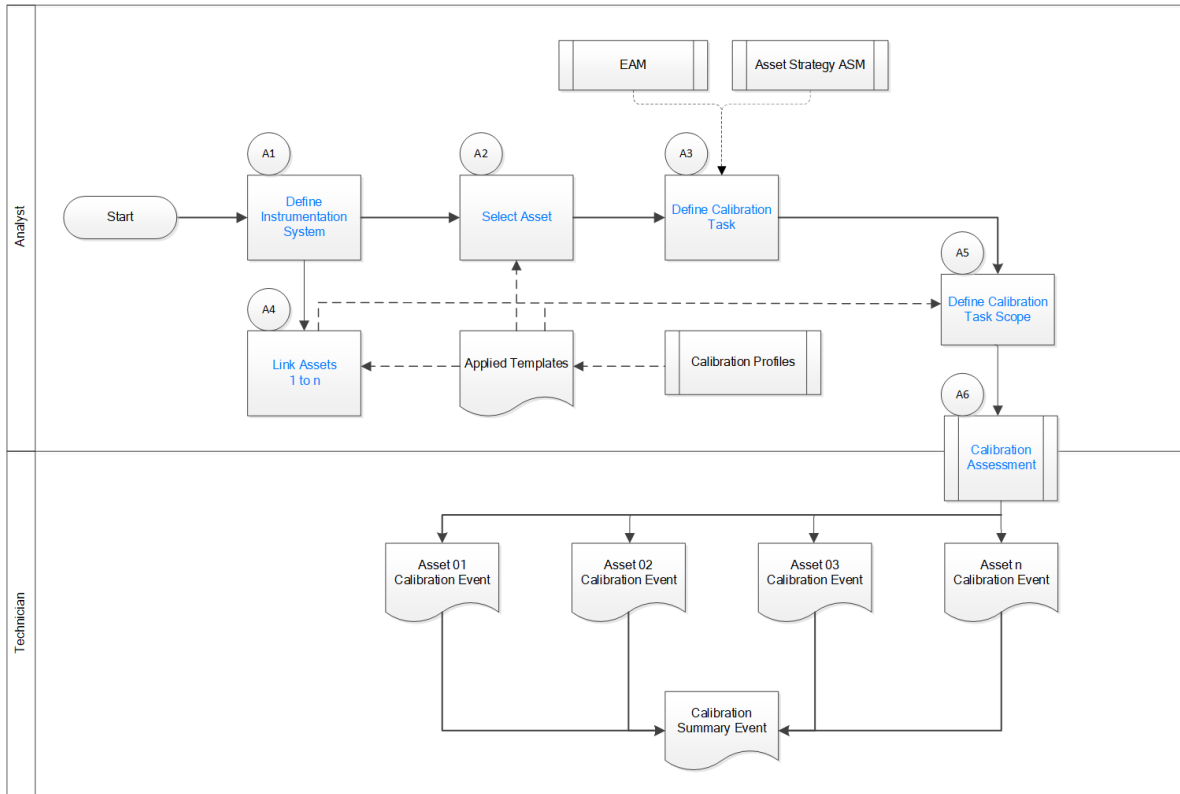
Calibration Management: Instrumentation System Planning Workflow

This workflow describes the planning process involved in conducting calibration for an Instrumentation System. This system is defined by linking a Functional Location or an Equipment as a parent-level asset that needs to be calibrated, and then linking one or more Functional Locations and/or Equipment as child assets that are part of the system that needs to be calibrated.

Note: Any existing Functional Location or Equipment can be added to the Instrumentation System; a parent-child relationship between assets is not required.

In the following workflow diagram, the blue text in a shape indicates that the corresponding description has been provided in the sections that follow the diagram. For more information, refer to the [Interpreting the Workflow Diagrams](#) topic in the [APM Product Workflows](#) documentation.

Note: For information on the personas associated with a GE Digital APM module, refer to the [APM Product Workflows](#) documentation.



Define Instrumentation Systems

Persona: Analyst

Create an Instrumentation Systems record.

This record is used to describe the Instrumentation System and to manage the calibrations and calibration schedules for the entire system. This record is site filtered.

Select Asset

Persona: Analyst

This asset represents the parent-level asset against which a Calibration Task will be defined and scheduled to calibrate the system.

Define Calibration Task

Persona: Analyst

Select Instrumentation System and create a Calibration Task record. This is to specify the schedule for performing the calibration for the entire system and assign the task to the user. This Calibration Task is linked to the parent asset of the Instrumentation System that is defined in [Select Asset](#) on page 10. When the calibration record is approved and closed, this Calibration Task is recycled to its next due date based on the defined interval.

Link Assets

Persona: Analyst

After creating an Instrumentation System record, link one or more child assets that need to be calibrated as part of the system. These child assets can be Functional Locations and/or Equipment. The child assets may be from the same Functional Location that is linked to the Instrumentation System or from a different Functional Location.

The selected child assets should already be a part of the Calibration Profile and have Applied Templates.

Define Calibration Task Scope

Persona: Analyst

In the Instrumentation System, you can group and organize asset-level calibration applied templates and review summary results. The Task Scoping process allows you to select all or a subset of calibration strategies (applied templates) that need to be collectively managed for the assets in the Instrumentation System. Typically, the strategies and schedule for all sub-assets within the Instrumentation System are similar, based on the criticality of the system/loop. It is possible that within the same Instrumentation System, calibration strategies may differ from one asset to another even though the schedule of the system/loop is the same. To facilitate this, you can scope the task at the Instrumentation System level by selecting the calibration strategies (applied templates) of the related sub-assets. Task scope can be modified to add or remove assets later.

One Instrumentation System can have one or more Calibration Tasks and each Calibration Task can have its task scope defined.

After defining the task scope, the child assets with their applied templates against the Calibration Task appear under Calibration Queue in the Calibration Management Overview page.

Calibration Assessment

Persona: Analyst / Calibration Technician

Go to the [Calibration Assessment](#) Workflow.

Perform either a manual calibration or an automated calibration for the child assets of the Instrumentation System. When the calibration event is created for any child asset, the summary event is automatically created. The PASS/FAIL results of the child event is automatically rolled up and marks the summary event as PASS or FAIL.

After the calibrations are completed and approved for all the child assets defined in the current task scope, the summary event can be approved. This recycles the Calibration Task associated with the Instrumentation System.

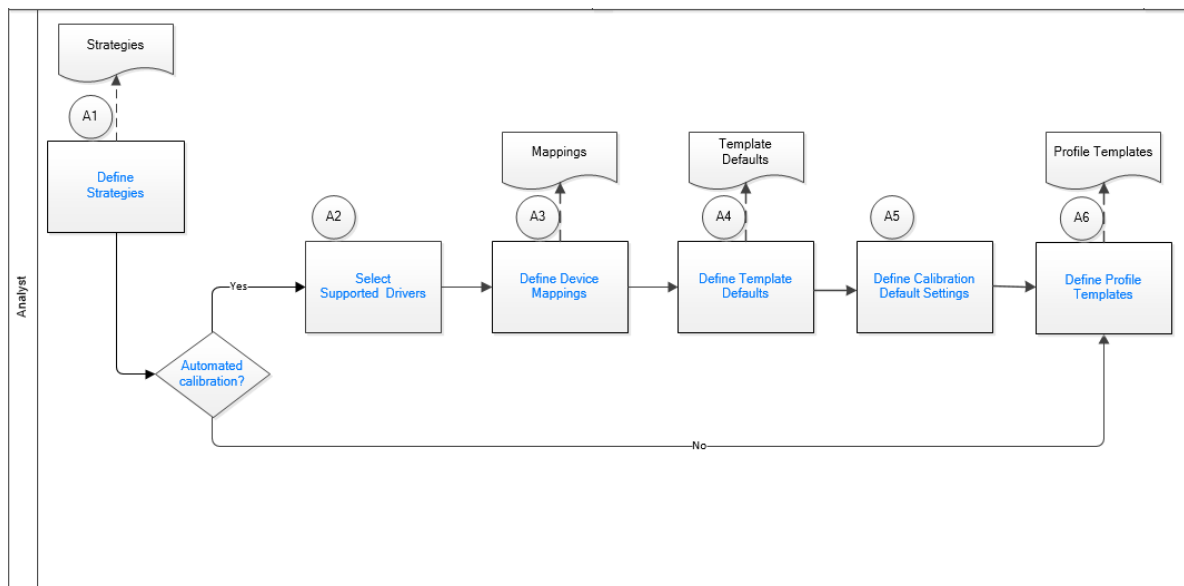
Calibration Administration

Calibration Management: Calibration Administration

This workflow describes the process of defining calibration strategies and device mappings via a manual calibration, a Beamex CMX calibration software, a Fluke documenting process calibrator, and a GE Druck documenting process calibrator.

In the following workflow diagram, the blue text in a shape indicates that the corresponding description has been provided in the sections that follow the diagram. For more information, refer to the [Interpreting the Workflow Diagrams](#) topic in the [APM Product Workflows](#) documentation.

Note: For information on the personas associated with a GE Digital APM module, refer to the [APM Product Workflows](#) documentation.



Define Strategies

Persona: Analyst

Define the strategies for the calibration, if they are not defined. The strategy will be independent of the documenting process calibrator or the method, automated or manual, to be used for calibration.

Automated Calibration?

Persona: Analyst

Identify whether you want to perform a manual calibration or an automated calibration.

- If you are performing a manual calibration, you create the calibration template to be used for a calibration task.
- If you are performing an automated calibration, you must define the mappings, in GE Digital APM, for sending data to a calibrator and receiving data from a calibrator.

Select Supported Drivers

Persona: Analyst

Identify the device that you will use to perform calibration. The tool will require a driver. You can select one of the following supported drivers:

- FLUKE 74X
- DPI 620
- DPI PRESSURE CALIBRATOR
- CMX

Define Device Mappings

Persona: Analyst

Define the device mappings, between the supported driver and GE Digital APM, which you will use for sending and receiving data from a documenting process calibrator. The device mappings will identify which values in Calibration Management will map to the defined tags.

Define Template Defaults

Persona: Analyst

For a supported driver, define the calibration type, analog or discrete, and then define the input details.

Define Calibration Setup Defaults

Persona: Analyst

Calibration setup defaults define default error limits, default strategies and default dead bands for the site.

Define Profile Templates

Persona: Analyst

Define the Profile template and associate the strategy, template defaults, input and output details, and an asset.

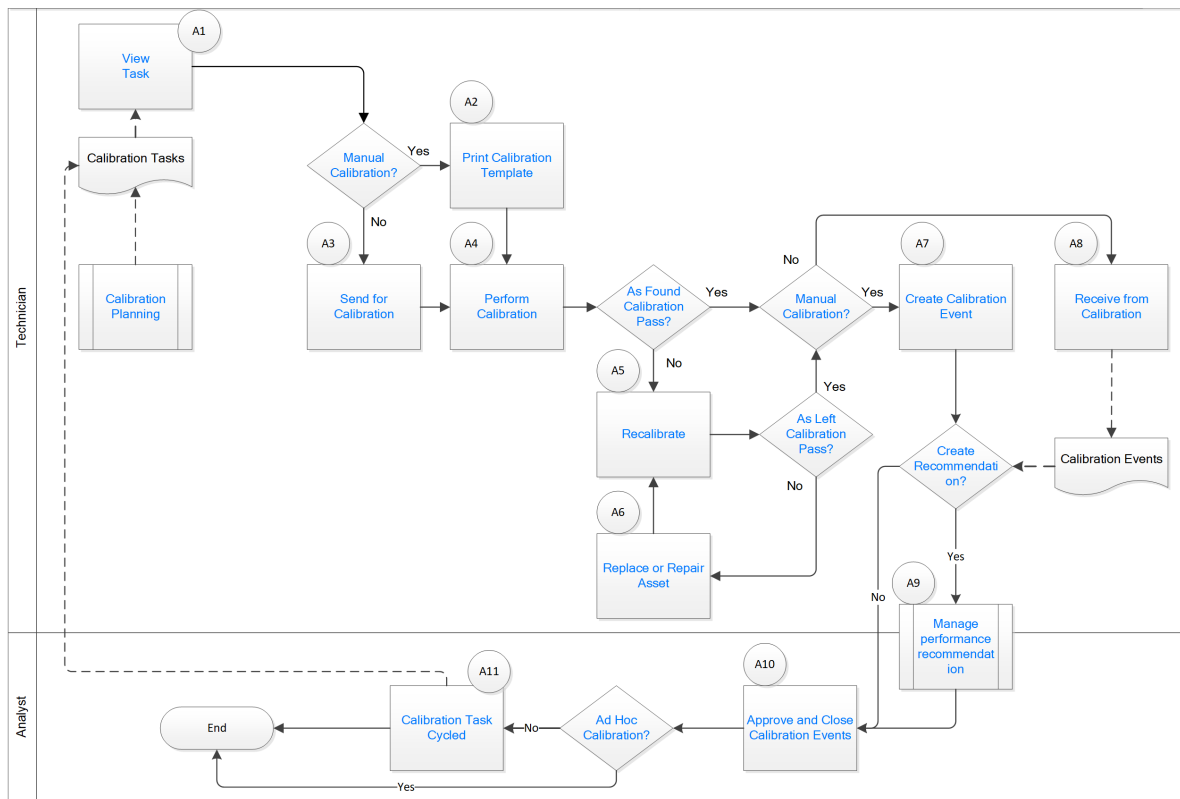
Calibration Assessment

Calibration Management: Calibration Assessment Workflow

This workflow describes the process of performing a calibration, verifying and saving the results, and proposing and approving recommendations via a manual calibration, a Fluke Documenting Process Calibrator, or a GE Druck Calibrator.

In the following workflow diagram, the blue text in a shape indicates that the corresponding description has been provided in the sections that follow the diagram. For more information, refer to the [Interpreting the Workflow Diagrams](#) topic in the [APM Product Workflows](#) documentation.

Note: For information on the personas associated with a GE Digital APM module, refer to the [APM Product Workflows](#) documentation.



View Task

Persona: Technician

The task is the calibration task that a calibration technician is expected to perform. The calibration task describes the asset to be calibrated, the calibration profile to be used, the tools to be used and other pertinent information related to the task.

Manual Calibration?

Persona: Technician

Identify whether you want to perform a manual calibration or an automated calibration.

- In a manual calibration, you print the Calibration Template, note the readings, and then create a Calibration Event manually to store the readings.
- In an automated calibration, you send the templates to a documenting process calibrator, perform the calibration, and then receive the data from the calibrator.

Send for Calibration

Persona: Technician

If you are performing an automated calibration, you must send the Calibration Templates to the documenting process calibrator.

Calibration Planning

Persona: Technician

Go to the [Calibration Planning workflow](#).

Print Calibration Template

Persona: Technician

If you are performing a manual calibration, print the Calibration Template. While performing calibration in the field, you can then enter the readings on the printed template.

Perform Calibration

Persona: Technician

If you are performing a manual calibration, note the readings for each test point on the Calibration Template that you have printed. Then, in GE Digital APM, create a Calibration record, and then enter the noted readings. If you are performing an automated calibration, verify the readings in the calibrator, and then save them. The calibrator displays the error at each test point.

As Found Calibration Pass?

Persona: Technician

In the Calibration record, determine if the As Found calibration has passed. If it has not, you will have to recalibrate the asset.

As Left Calibration Pass?

Persona: Technician

After recalibrating the asset, enter the readings in the same Calibration record in which you entered the As Found readings. Determine if the As Left calibration has passed. If it has not, you must replace or repair the asset.

Replace or Repair Equipment

Persona: Technician

If the As Left calibration fails, then you must replace or repair the asset before recalibrating it again.

Create Calibration Event

Persona: Technician

Create a Calibration Event to store the readings gathered from the manual calibration, and then enter those readings in the Calibration Event record.

Recalibrate

Persona: Technician

If the As Found calibration fails, you must recalibrate the asset.

Receive from Calibration

Persona: Technician

If you have performed an automated calibration, connect the calibrator to GE Digital APM, and then receive the data from the calibrator. After you save the data, Calibration records are created for each calibration that you have performed using the calibrator.

Create Recommendation

Persona: Technician

You can create a recommendation to suggest ways to improve the calibration results or to prevent overt failures such as broken electrical conduit, failure of a protective element, rusted wires, or the presence of excess moisture.

Approve Recommendations

Persona: Analyst

Approve recommendations by changing the value in the Status field of the recommendations that you want to approve to Reviewed.

Manage Performance Recommendation

Persona: Technician, Analyst

Manage performance recommendation is a subprocess managed outside of calibration management module.

Go to the Action Management: Manage Recommended Actions Workflow.

Approve and Close Calibration Events

Persona: Analyst

Verify the results of the calibration, and then close the calibration. After you close the calibration, all the other fields in the Calibration are disabled, and the associated Calibration Task is cycled.

Ad-Hoc Calibration

Persona: Analyst

Ad-Hoc calibration is performed on the asset that needs to be calibrated outside of its calibration schedule. A predefined calibration task controls the schedule. Therefore, the **Ad-Hoc Calibration** check

box available to the user allows the user to calibrate an asset without recycling the task associated with that asset.

Calibration Task Cycled

Persona: Analyst

After you close the Calibration Events, the associated Calibration Task is cycled automatically. If the task is recurring, then the Last Date and the Next Date fields are updated. If the task is not recurring, then the task is set to complete, and is removed from the **Calibration Queue** section.

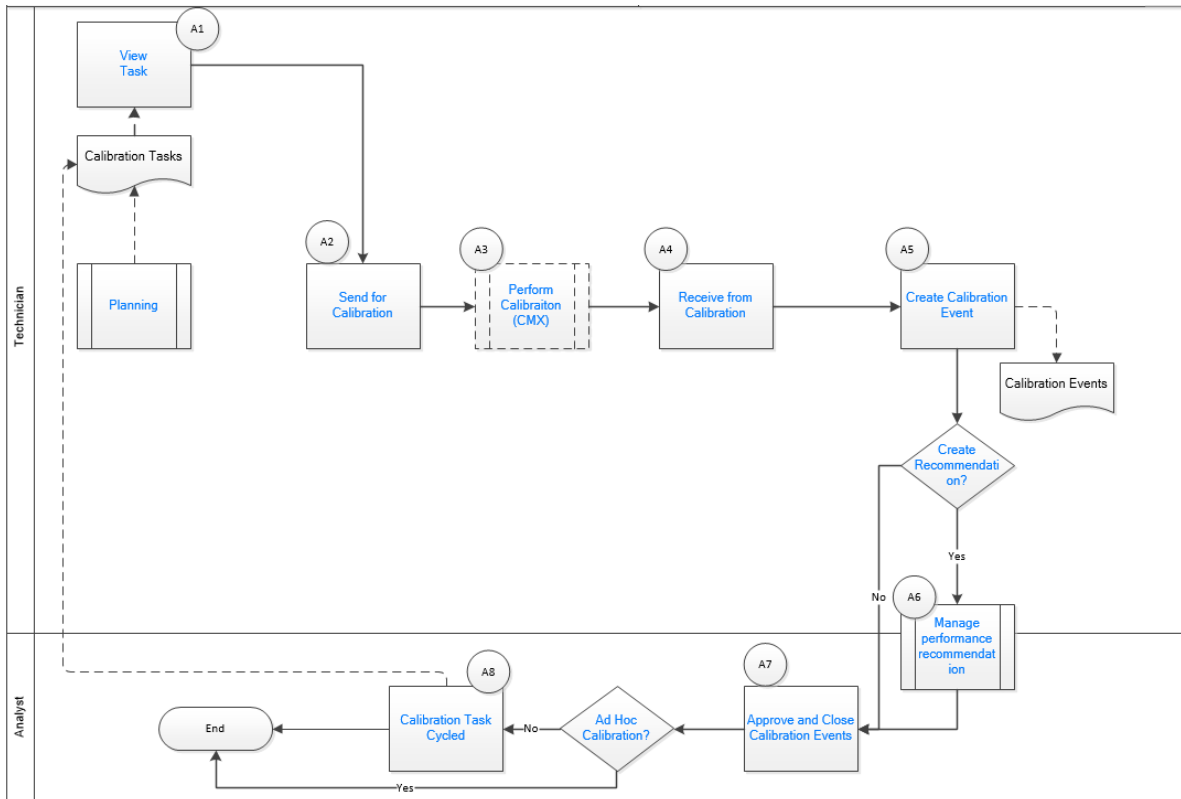
Calibration Assessment CMX

Calibration Management: Calibration Assessment CMX Workflow

This workflow describes the process of performing a calibration using Calibration Management and Beamex CMX calibration software. This includes sending the calibration work order data to the Beamex CMX calibration software, receiving the calibration data after the work order is run from Beamex CMX calibration software, verifying and saving the results in Calibration Management, and then proposing and approving recommendations.

In the following workflow diagram, the blue text in a shape indicates that the corresponding description has been provided in the sections that follow the diagram. For more information, refer to the [Interpreting the Workflow Diagrams](#) topic in the [APM Product Workflows](#) documentation.

Note: For information on the personas associated with a GE Digital APM module, refer to the [APM Product Workflows](#) documentation.



View Task

Persona: Technician

View the work order for the asset to be calibrated, the calibration profile to be used, the tools to be used, and other pertinent information related to the task.

Send for Calibration

Persona: Technician

Send the work order details of the calibration to be performed to CMX Calibration Management software.

Calibration Planning

Persona: Technician

Go to the [Calibration Planning workflow](#).

Perform Calibration (CMX)

Persona: Technician

Perform the calibration by sending the functions for calibration from Beamex CMX calibration software to the supported calibrator, such as Beamex MC5 or Beamex MC6. After the calibration is performed, the calibrator is connected to the Beamex CMX calibration software. The Beamex CMX calibration software downloads the calibration data, such as calibration template, input, and output units of measure. Refer to the Beamex documentation for additional details.

Receive from Calibration

Persona: Technician

When you receive data for a completed work order for calibration from CMX Calibration Management software, the calibration data is loaded into GE Digital APM. The calibration data sent by the CMX Calibration Management software contains the work order, pass/fail status of the calibration, and additional details related to the performed calibration.

Create Calibration Event

Persona: Technician

Create a Calibration Event to store the readings gathered from the calibration, and then enter those readings in the Calibration Event record for review and future processing.

Create Recommendation

Persona: Technician

You can create a recommendation to suggest ways to improve the calibration results or to prevent overt failures such as broken electrical conduit, failure of a protective element, rusted wires, or the presence of excess moisture.

Manage Performance Recommendation

Persona: Technician, Analyst

Create performance recommendations and approve them using state management.

Go to the Action Management: Manage Recommendation Actions Workflow.

Approve and Close Calibration Events

Persona: Analyst

Verify the results of the calibration, and then close the calibration. After you close the calibration, all the other fields in the Calibration are disabled, and the associated Calibration Task is cycled.

Ad Hoc Calibration?

Persona: Analyst

Ad-Hoc calibration is performed on the asset that needs to be calibrated outside of its calibration schedule. A predefined calibration task controls the schedule. Therefore, the Ad-Hoc Calibration check box available to the user allows the user to calibrate an asset without recycling the task associated with that asset.

Calibration Task Cycled

Persona: Analyst

After you close the Calibration Events, the associated Calibration Task is cycled automatically. If the task is recurring, then the Last Date and the Next Date fields are updated. If the task is not recurring, then the task is set to complete, and is removed from the **Calibration Queue** section.

Chapter 3

Test Equipment

Topics:

- [About Test Equipment](#)
- [About Reference Documents](#)
- [Create a Test Equipment](#)
- [Access a Test Equipment](#)
- [Add a Test Equipment To a Calibration](#)
- [Access a Reference Document for a Test Equipment](#)
- [Delete a Test Equipment](#)
- [Create a Test Equipment History](#)
- [Access a Test Equipment History](#)
- [Delete a Test Equipment History](#)

About Test Equipment

Test equipment refers to any asset that is used to perform a calibration. Examples of test equipment include documenting process calibrators, pressure gauges, and thermometers. Test Equipment records store information about the test equipment that you use to perform calibrations.

Before you perform a calibration, you should create a Test Equipment to represent each asset you will use to perform the calibration. When you do so, you must also provide certification information for each piece of test equipment.

A Test Equipment is used to:

- **Track certification status of Test Equipment.** Before you perform a calibration, you must identify the device that will be used (i.e., the test equipment) by entering the manufacturer and serial number of the device. The GE Digital APM system will use that information to identify the Test Equipment for that device, and then determine if the specified device is certified or not according to the value stored in the Certification Status field in that record.
- **Provide test equipment information for a calibration event.** You can link up to three Test Equipment records to a Calibration in order to provide information about the test equipment that was used to perform a particular calibration. The **Test Equipment** section on the Calibration Event datasheet contains three columns (i.e., **Test Equip 1**, **Test Equip 2**, and **Test Equip 3**), where each column represents a single Test Equipment, and each row represents a field in the corresponding record. These fields are populated when the Test Equipment is linked to the Calibration.

Test Equipment Certification

Test equipment certification is typically performed by a third-party organization in order to prove that the standards used by the test equipment to perform calibrations are accurate and valid with regard to the National Institute of Standards and Technology (NIST) or other standards organizations. For example, if you are using a piece of test equipment to calibrate the clock on another piece of equipment, you must certify that the test equipment clock is accurate with regard to the standard time. The third-party organizations that perform these certifications often use a process that is in compliance with the standard ISO/IEC 17025. Information about the test certification is stored in Test Equipment History records. You can also attach a reference document to each Test Equipment History.

To ensure that the test equipment remains accurate, it should be re-certified on a set time interval (e.g., once a year). If the test equipment is not re-certified within the defined time interval, it will be considered out of certification. If you enter the most recent certification date and certification interval in a Test Equipment record, it will automatically determine whether that asset is currently certified, and that information will be stored in the Certification Status field. Test Equipment History records store the certification history of a piece of test equipment, and are linked to the corresponding Test Equipment record for that asset.

Although the GE Digital APM system does not require you to use a certified device, it is recommended that you use a certified device to perform calibrations.

About Reference Documents

Reference documents allow you to associate files or websites with a record in the GE Digital APM database. For example, while performing an inspection, you might take pictures of the asset that you are inspecting and save them on your local machine or company network. Then, while recording the inspection details in a General Inspection record in GE Digital APM, you can link those images, as reference

documents, to the General Inspection record, so that when other users open the General Inspection record, they will be able to view the images.

In Calibration Management, a reference document could be a certificate for the test equipment issued by a calibration laboratory.

Each time you associate a reference document file with a record, a Reference Document record will be created and linked to that record. You can link Reference Document records to any record belonging to a family for which the Has Reference Documents relationship has been defined via the Configuration Manager. The GE Digital APM system supports two different types of reference documents:



- **Internal Reference Documents:** Reference document files that are stored in the GE Digital APM database.
- **External Reference Documents:** Reference document files and websites that reside outside of the GE Digital APM database and are referenced in a Reference Document record. Internal reference documents can be accessed only by users who have permission to access the location in which they are stored. Other users would be able to view an external reference document that is stored in a public location, such as a network drive.

Create a Test Equipment

Procedure

1. Access the [Calibration Management Overview](#) page.

Tip: You can also [access the Calibration Management Overview](#) page for a hierarchy level.

2. In the workspace, select the **Calibration Tools** tab.
The **Calibration Tools** section appears, displaying a list of Test Equipments and Standard Gas Cylinders.
3. In the upper-left corner of the section, select , and then select **Test Equipment**.
A blank datasheet for the Test Equipment appears.
4. As needed, enter values in the [available fields](#).
5. In the upper-right corner of the datasheet, select .
The Test Equipment is created.

Next Steps

- [Create a Test Equipment History](#)

Access a Test Equipment


Procedure

1. Access the [Calibration Management Overview](#) page.

Tip: You can also [access the Calibration Management Overview](#) page for a hierarchy level.

2. Select the **Calibration Tools** tab.
The **Calibration Tools** section appears, displaying a list of Test Equipments and Standard Gas Cylinders.
3. In the **Tool ID** column, select the link for the Test Equipment that you want to access.

The details of the selected Test Equipment appear on a new page, displaying the **Test Equipment Details**, **Test Equipment History**, and **Reference Documents** sections. By default, the **Test Equipment Details** section appears, displaying the datasheet for the selected Test Equipment.

Note: As needed, you can modify the values in the [available fields](#), and then select  to save your changes.

Add a Test Equipment To a Calibration


About This Task

This topic describes how to select a Test Equipment for a Calibration record.

Procedure

1. Access the [Calibration Management Overview](#) page.

Tip: You can also [access the Calibration Management Overview page for a hierarchy level](#).

2. Select the **Calibration Events** tab.
The **Calibration Events** section appears, displaying a list of Calibration records.
3. In the **EVENT ID** column, select the link for the Calibration that you want to access.
The **Identification** section appears, displaying the datasheet for the selected Calibration.
4. Select the **Test Equipment** tab.
The **Test Equipment** section appears, displaying boxes under the Test Equipment 1, Test Equipment 2, and Test Equipment 3 columns.
5. In the column that you want to add the Test Equipment, in the **Test Equipment ID** box, select .
The **Search** window appears.
6. Specify the search criteria, select a Test Equipment record, and then select **OK**.
The boxes under the selected column is populated with the values corresponding to the Test Equipment record that you selected.

Note: To clear the selected Test Equipment from the Calibration, select Clear in the **Test Equipment ID** box.

7. Select .
The selected Test Equipment is added to the Calibration.

Access a Reference Document for a Test Equipment

Procedure

1. Access the [Test Equipment](#) whose Reference Documents you want to access.
2. Select the **Reference Documents** tab.
The **Reference Documents** section appears, displaying a list of reference documents that are linked to the Test Equipment.

Tip: For more information, refer to the [Manage Reference Documents](#) section of the Record Manager module for additional options when working with reference documents.

Delete a Test Equipment


About This Task

Important: Deleting a Test Equipment also deletes all the associated Test Equipment Histories.

Procedure

1. Access the [Calibration Management Overview](#) page.

Tip: You can also access the [Calibration Management Overview](#) page for a hierarchy level.


2. Select the **Calibration Tools** tab.
The **Calibration Tools** section appears, displaying a list of Test Equipment records and Standard Gas Cylinders.
3. Next to each Test Equipment that you want to delete, select the check box.
4. In the upper-right corner of the section, select .
The **Delete Test Equipment(s)** dialog box appears, asking you to confirm that you want to delete the selected Test Equipment.
5. Select **OK**.
The Test Equipment and all the associated Test Equipment Histories are deleted.

Create a Test Equipment History

Before You Begin

- [Create a Test Equipment](#).

Procedure

1. Access the [Test Equipment](#) for which you want to create a Test Equipment History.
2. In the workspace, select the **Test Equipment History** tab.
The **Test Equipment History** section appears, displaying a list of Test Equipment Histories.
3. As needed, enter values in the [available fields](#).
4. In the upper-right corner of the page, select .

Results


- The Test Equipment History is created.
- The most recent certification date among those found in Test Equipment Histories linked to the Test Equipment is populated in the Last Certification Date field of the Test Equipment.

Next Steps

- [Create a Profile Template](#)

Access a Test Equipment History

Procedure



1. [Access the Test Equipment](#) that is linked to the Test Equipment History.
2. In the workspace, select the **Test Equipment History** tab.
The **Test Equipment History** section appears, displaying a list of Test Equipment Histories.
3. If needed, modify values in the [available fields](#).
4. In the page, select .

Results

- The changes made to the Test Equipment History are saved.
- The most recent certification date among those found in Test Equipment Histories linked to the Test Equipment is populated in the Last Certification Date field of the Test Equipment.

Delete a Test Equipment History

Procedure

1. [Access the Test Equipment](#) that is linked to the Test Equipment History that you want to delete.
2. Select the **Test Equipment History** tab.
The **Test Equipment History** section appears, displaying a list of Test Equipment Histories.
3. In the upper-right corner of the section, select .
Next to each Test Equipment History, a check box appears.
4. Next to each Test Equipment History that you want to delete, select the check box.
5. In the upper-right corner of the section, select , and then select **Delete**.
The **Confirm Delete** dialog box appears, asking you to confirm that you want to delete the selected entities.
6. Select **Yes**.

Results

- The Test Equipment History is deleted.
- The most recent certification date among those found in Test Equipment Histories linked to the Test Equipment is populated in the Last Certification Date field of the Test Equipment.

Chapter 4

Standard Gas Cylinder and Components

Topics:

- [About Standard Gas Cylinder and its Components](#)
- [Create a Standard Gas Cylinder](#)
- [Access a Reference Document for a Standard Gas Cylinder](#)
- [Access a Standard Gas Cylinder](#)
- [Delete a Standard Gas Cylinder](#)
- [Create a Standard Gas Component](#)
- [Access a Standard Gas Component](#)
- [Delete a Standard Gas Component](#)


About Standard Gas Cylinder and its Components

A standard gas cylinder is a pressure vessel that stores a mixture of gases of known composition. It is used to calibrate single and multi-component analyzers. The details of a standard gas cylinder and its components are stored in a Standard Gas Cylinder record and Standard Gas Component records, respectively. You must create these records before you calibrate single or multi-component analyzers. Note that for each component in the cylinder, you must create one Standard Gas Component. A Standard Gas Cylinder is linked to each Standard Gas Component through the Has Component relationship.

While creating a Calibration Template for a single or multi-component analyzer, you can link a Standard Gas Cylinder to the template. The GE Digital APM system creates one Calibration Template Detail record for each component of the cylinder.

Create a Standard Gas Cylinder

Procedure

1. Access the [Calibration Management Overview](#) page.
Tip: You can also [access the Calibration Management Overview](#) page for a hierarchy level.
2. In the workspace, select the **Calibration Tools** tab.
The **Calibration Tools** section appears, displaying a list of Test Equipments and Standard Gas Cylinders.
3. In the upper-left corner of the section, select **+**, and then select **Standard Gas Cylinder**.
A blank datasheet for the Standard Gas Cylinder appears.
4. As needed, enter values in the [available fields](#).
5. In the upper-right corner of the datasheet, select .
The Standard Gas Cylinder is created.

Next Steps

- [Create a Standard Gas Component](#)

Access a Reference Document for a Standard Gas Cylinder

Procedure

1. [Access the Standard Gas Cylinder](#) for which you want to attach a reference document.
2. Select the **Reference Documents** tab.
The **Reference Documents** section appears, displaying a list of reference documents that are linked to the Standard Gas Cylinder.

Tip: For more information, refer to the [Manage Reference Documents](#) section of the Record Manager module for additional options when working with reference documents.


Access a Standard Gas Cylinder

Procedure

1. Access the [Calibration Management Overview](#) page.

Tip: You can also [access the Calibration Management Overview](#) page for a hierarchy level.

2. Select the **Calibration Tools** tab.
The **Calibration Tools** section appears, displaying a list of Test Equipments and Standard Gas Cylinders.

Note: As needed, you can modify the values in the [available fields](#), and then select  to save your changes.

Delete a Standard Gas Cylinder


About This Task

Important: Deleting a Standard Gas Cylinder also deletes all the associated Standard Gas Components.

Procedure

1. Access the [Calibration Management Overview](#) page.

Tip: You can also [access the Calibration Management Overview](#) page for a hierarchy level.


2. In the workspace, select the **Calibration Tools** tab.
The **Calibration Tools** section appears, displaying a list of Test Equipments and Standard Gas Cylinders.
3. Next to each Standard Gas Cylinder that you want to delete, select the check box.
4. In the upper-right corner of the section, select .
The **Delete Test Equipment(s)** dialog box appears, asking you to confirm that you want to delete the selected Test Equipment.
5. Select **OK**.
The selected Test Equipment is deleted.

Create a Standard Gas Component

Before You Begin

- [Create a Standard Gas Cylinder](#).

Procedure

1. Access the [Standard Gas Cylinder](#) for which you want to create a Standard Gas Component.
2. In the workspace, select the **Standard Gas Components** tab.
The **Standard Gas Components** section appears, displaying a list of Standard Gas Components.
3. As needed, enter values in the [available fields](#).
4. In the upper-right corner of the page, select .


The Standard Gas Component is created.

Next Steps

- [Create a Profile Template](#) on page 83

Access a Standard Gas Component

Procedure



1. [Access the Standard Gas Cylinder](#) that is linked to the Standard Gas Component that you want to access.
2. In the workspace, select the **Standard Gas Components** tab.
The **Standard Gas Components** section appears, displaying a list of Standard Gas Components.
3. If needed, modify values in the [available fields](#).
4. In the upper-right corner of the page, select .
The changes made to the Standard Gas Component are saved.

Next Steps

- [Link a Calibration Task to a Profile](#)

Delete a Standard Gas Component

Procedure

1. [Access the Standard Gas Cylinder](#) that is linked to the Standard Gas Component that you want to delete.
2. Select the **Standard Gas Components** tab.
The **Standard Gas Components** section appears, displaying a list of Standard Gas Components.
3. In the upper-right corner of the section, select .
Next to each Standard Gas Component, a check box appears.
4. Next to each Standard Gas Component that you want to delete, select the check box.
5. In the upper-right corner of the section, select , and then select **Delete**.
The **Confirm Delete** dialog box appears, asking you to confirm that you want to delete the selected entities.
6. Select **Yes**.
The Standard Gas Component is deleted.

Chapter 5

Calibration Templates and Profiles

Topics:

- [About Calibration Templates and Calibration Profiles](#)
- [Create a Calibration Profile](#)
- [Access a Calibration Profile](#)
- [Generate a Calibration Template Report](#)
- [Link Assets to a Calibration Profile](#)
- [Unlink an Asset from a Calibration Profile](#)
- [Delete a Calibration Profile](#)

About Calibration Templates and Calibration Profiles

This topic provides information on how Calibration Templates and Calibration Profiles are linked to each other.

Calibration Templates

Calibration Templates contain the setup information for calibrations. They store the following information that you can use to define the calibrations that should be performed for an asset:

- Calibration strategy
- Input/output ranges
- Maximum error limit

The following baseline Calibration Template families are provided, and let you store information for a specific type of calibration:

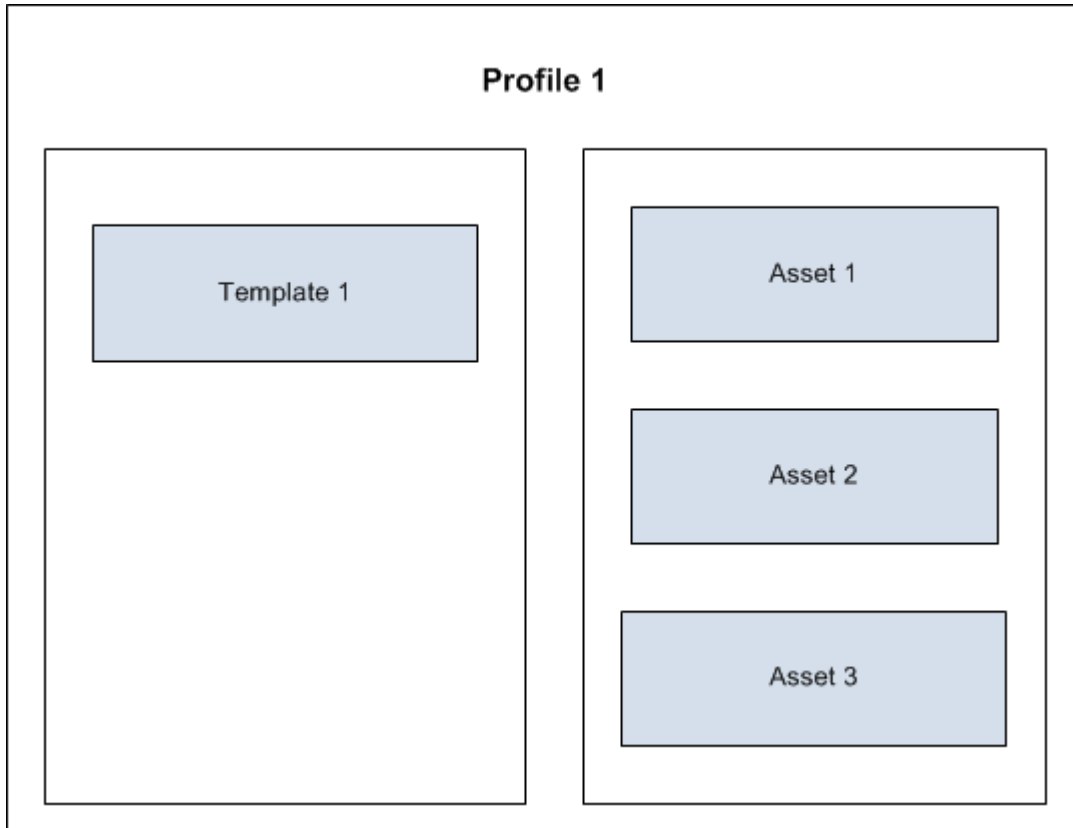
- **Calibration Template, Analog:** Records calibration strategy details of a device that measures an input value and displays the output as an analog signal. Example: speedometer, pressure gauge, thermometer.
- **Calibration Template, Discrete:** Records calibration strategy details of a device that uses a single or a double switch that changes state at the setpoint. Example: fire detector, pressure switch, level switch.
- **Calibration Template, Weight Scale:** Records calibration strategy details of a device that is used to measure weight.
- **Calibration Template, Analyzer Multi-Component:** Records calibration strategy details of a device that measures the composition of multiple components of a liquid or a gas. Example: mass spectrometer, liquid or gas chromatograph.
- **Calibration Template, Analyzer Single Component:** Records calibration strategy details of a device that detects the presence or measures the composition of a gas or a liquid. Example: toxic gas detector, pH detector.
- **Calibration Template, Functional Test:** Records details about how a functional test has to be performed by means of a set of questions with predetermined sets of acceptable answers.
- **Calibration Template, CMX:** Records calibration strategy details of for a calibration that has to be sent for calibration to Beamex CMX calibration software.

Only members of the Calibration Administrator Security Group can create, modify, copy, or delete Calibration Templates and Calibration Template Detail records. Members of the Calibration User Security Group can only access and print these records.

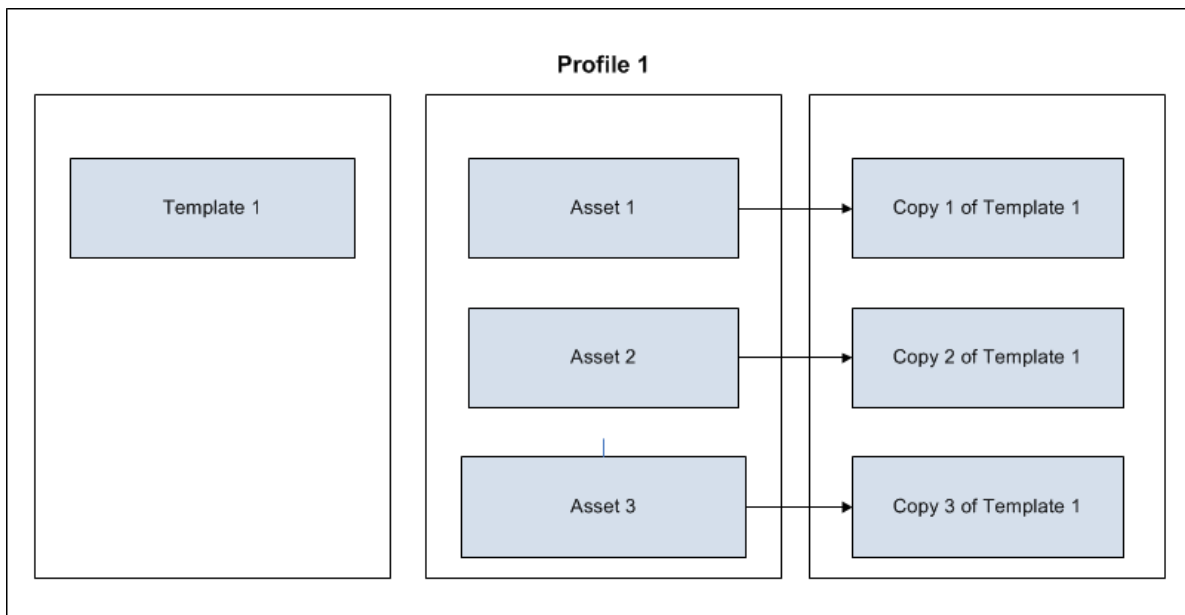
Calibration Profiles

A Calibration Profile is a collection of templates that are linked to an Asset. When you create a profile, you select a calibration template, which is called the Profile Template. You then link Assets to the profile. GE Digital APM creates a copy of the original template that you have linked. Each copy is linked to each of the Assets.

For example, suppose you have created a Calibration Profile: Profile 1. You have linked it to a Calibration Template: Template 1. You have now linked Profile 1 to three Assets: Asset 1, Asset 2, and Asset 3.

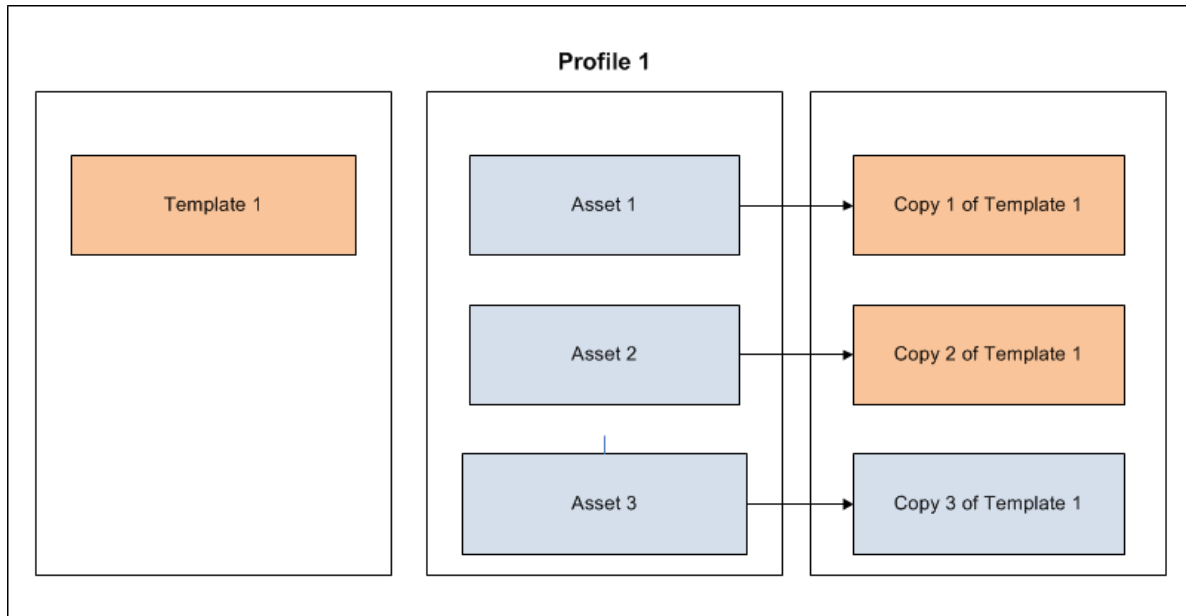


GE Digital APM creates three copies of the Profile Template, Template 1, and links them to Asset 1, Asset 2, and Asset 3.



If you modify Template 1, a window appears, displaying a list of Assets that use Template 1. In this example, the window lists Asset 1, Asset 2, and Asset 3. You can select which templates among the ones linked to the three Assets should be updated with the changes made to Template 1. If you select Asset 1

and Asset 2, then Copy 1 of Template 1 and Copy 2 of Template 1 are updated with the changes made to Template 1.



Baseline Templates for Beamex CMX calibration software

GE Digital APM provides you with 30 preconfigured Calibration Templates that can be used for creating Calibration Profiles for calibration with Beamex CMX calibration software. These 30 templates are configured to match the template types that are supported by Beamex CMX calibration software. These templates are listed on the **Profile Templates** page. You can [access these templates from the Profile Templates page](#). If needed, you can modify the values in these templates, and then use them to create Calibration Profiles.

The following table provides the list of preconfigured Calibration Templates of type CMX that are available in the baseline:

| Template ID | Calibration Strategy | Input Type | Output Type | Calibration Type |
|-------------------------------|----------------------|-------------|-------------|------------------|
| Pressure Indicator | 5U/D | PRESSURE | PRESSURE | CMX |
| Electrical Converter | 5U/D | ELECTRICAL | ELECTRICAL | CMX |
| Pressure Transmitter | 5U/D | PRESSURE | ELECTRICAL | CMX |
| Temperature Indicator | 5U/D | TEMPERATURE | TEMPERATURE | CMX |
| Pressure Indicator, % display | 5U/D | PRESSURE | VALUE | CMX |
| Temperature Transmitter FF | 5U/D | TEMPERATURE | TEMPERATURE | CMX |
| Temperature Transmitter HART | 5U/D | TEMPERATURE | TEMPERATURE | CMX |
| Pressure Transmitter FF | 5U/D | PRESSURE | PRESSURE | CMX |

| Template ID | Calibration Strategy | Input Type | Output Type | Calibration Type |
|----------------------------------|----------------------|-------------|-------------|------------------|
| Checklist, IEC60079-17, Table 2 | 25S | CHECKLIST | N/A | CMX |
| P/I Converter | 5U/D | PRESSURE | ELECTRICAL | CMX |
| Pressure Switch | 2SW | PRESSURE | VALUE | CMX |
| Thickness | 3U | VALUE | VALUE | CMX |
| Gas Detector (CO) | 3U | VALUE | VALUE | CMX |
| Electrical Indicator, % display | 5U/D | ELECTRICAL | VALUE | CMX |
| Weighing Instrument | 5U/D | MASS | MASS | CMX |
| Temperature Switch | 2SW | TEMPERATURE | VALUE | CMX |
| I/P Converter | 5U/D | ELECTRICAL | PRESSURE | CMX |
| Electrical Switch | 2SW | ELECTRICAL | STATE | CMX |
| P/P Converter | 5U/D | PRESSURE | PRESSURE | CMX |
| Temperature Element | 5U/D | TEMPERATURE | TEMPERATURE | CMX |
| Pressure Transmitter HART | 5U/D | PRESSURE | PRESSURE | CMX |
| Checklist, IEC60079-17, Table 1 | 25S | CHECKLIST | N/A | CMX |
| Checklist | 3S | CHECKLIST | N/A | CMX |
| Temperature Transmitter | 5U/D | TEMPERATURE | ELECTRICAL | CMX |
| Temperature Indicator, % display | 5U/D | TEMPERATURE | VALUE | CMX |
| Flow Transmitter | 5U/D | PRESSURE | ELECTRICAL | CMX |
| Length | 3U | VALUE | VALUE | CMX |
| Electrical Indicator | 5U/D | ELECTRICAL | ELECTRICAL | CMX |
| Temperature Transmitter PA | 5U/D | TEMPERATURE | TEMPERATURE | CMX |
| Pressure Transmitter PA | 5U/D | PRESSURE | PRESSURE | CMX |



Note: IEC 60079-17 applies to users and covers factors directly related to the inspection and maintenance of electrical installations within hazardous areas only, where the hazard may be caused by flammable gases, vapors, mists, dusts, fibers. For additional details, see the IEC 60079-17 standard provided by the International Electrotechnical Commission (IEC).

Create a Calibration Profile

Before You Begin

- [Create a profile template](#)
- or-
- [Create a manual template](#)

Procedure

1. Access the [Calibration Management Overview](#) page.
Tip: You can also [access the Calibration Management Overview](#) page for a hierarchy level.
2. Select the **Calibration Profiles** tab.
The **Calibration Profiles** section appears, displaying a list of Calibration Profiles available in the database.
3. In the **Calibration Profiles** section, select .
On a new page, a blank datasheet for the new calibration profile appears.
4. As needed, enter values in the [available fields](#).
5. In the upper-right corner of the section, select .
The Calibration Profile is created.


Next Steps

- [Link Assets to a Calibration Profile](#)

Access a Calibration Profile


Procedure

1. Access the [Calibration Management Overview](#) page.
Tip: You can also [access the Calibration Management Overview](#) page for a hierarchy level.
Note: You can also access a Calibration Profile from the **Calibration Queue** tab. Select the **Calibration Queue** tab, and in the **Profile ID** column, select the required task.
2. Select the **Calibration Profiles** tab.
The **Calibration Profiles** section appears, displaying a list of Calibration Profiles.
3. In the **Profile ID** column, select the Calibration Profile that you want to access.
The datasheet for the Calibration Profile appears. In the **Linked Assets** section, the assets linked to the profile appear.
Note: The asset ID of the field selected for the family (Equipment, Functional Location, or custom asset) in the Asset ID configuration is used in the Template ID of the linked asset. As needed, you can modify the values in the [available fields](#).
4. If you want to modify the Asset ID for a linked asset, follow these steps:
 - a. In the **Linked Assets** section, in the **Asset ID** column, select the required asset.
The **Record Explorer** workspace appears on a new page.
 - b. As needed, modify values in the available fields.

- On the page, select .
5. If you want to customize values in the profile template for a linked asset, follow these steps:
 - a. In the **Linked Assets** section, in the **Template ID** column, select the link.
The **Edit Default from Template** window appears, displaying the **Equipment Details** section.
 - b. As needed, modify the values in the [available fields based on the profile template that you selected](#).
 - c. Select **Save**.

Note: If you want to restore a customized template to its default state, select **Restore Template Defaults**.

The Applied Templates of the selected assets are updated with the details of the selected profile template.

6. In the page, select .

Next Steps


- [Link a Calibration Task to a Profile](#)

Generate a Calibration Template Report

About This Task

You can generate a Calibration Template report and print it to record the readings taken when performing a calibration.


Procedure

1. [Access the Calibration](#) for which you want to generate a report.
2. In the upper-right corner of the datasheet, select  , and then select **View Report**.

The Calibration report is generated. You can print, save, or export the report or attach the report to an email.

Analog Calibration Template Report Refresh

Last Modified On : 5/24/2017 12:17:55 PM Modified By Administrator, Meridium

 **Analog Field Calibration Report**

Calibration Details

Calibration Type: DPI 620
Calibration Template ID: 60F-10V, DPI 620, 2U, bar, - mA
Tag ID: 000000004005007
Tag Description: 60F10V HG GUARD BED FILTER
Manufacturer:
Model Number:
Serial Number:
Physical Location:
Site ID: Roanoke, VA

Calibration Range

Calibration Strategy: **Allowable Error:**

| | LR Value | UR Value | Range UOM |
|------------------------------|----------|----------|-----------|
| Primary Input Range: | 0 | 2 | bar |
| Primary Output Range: | 4 | 20 | mA |
| Custom Input Range: | | | |
| Custom Output Range: | | | |

Note: You can generate multiple reports at a time by following the bulk printing workflow in the Bulk Printing of Calibration Reports.



Link Assets to a Calibration Profile

Before You Begin

- Link the Calibration Profile to a profile template.
- You can only link assets that belong to the same site as the Calibration Profile or the site to which you are assigned.

Important: If you have created the Calibration Profile in GE Digital APM V3.6.0.0.0 or later, and then upgraded to the current version, then you cannot link an asset to the Calibration Profile. If, however, you have created the Calibration Profile in V4.2.0.0.0 or later, you can link an asset to the Calibration Profile.

Procedure

1. [Access the Calibration Profile](#) to which you want to link assets.
2. In the **Linked Assets** section, select  .
The **Asset Finder** window appears.
3. In the row containing each asset that you want to link, select  .
The selected assets appear in the right section.
4. Select **Done**.

The assets are linked to the Calibration Profile. If, however, any of the assets is already linked to the Calibration Profile, a validation message appears, indicating that the asset has already been linked, and will not be linked again.

Results

- A copy of the Profile Template is created, and linked to the asset.

Note: The original template (i.e., the profile template) is not linked to the asset. Only a copy of the template is linked to the asset.

Next Steps

- [Link a Calibration Task to the Calibration Profile](#)


Unlink an Asset from a Calibration Profile

About This Task

When you unlink an asset from a Calibration Profile, the copy of the template that is linked to the asset (i.e., the applied profile) is deleted.

Note: The original template (Profile Template) is not deleted. Only the copy of the template is deleted.

Procedure

1. [Access the Calibration Profile](#) that is linked to the Asset that you want to unlink.
2. In the **Linked Assets** section, next to the Asset that you want to unlink, select the check box.
3. In the upper-right corner of the section, select .

A warning message appears, indicating that the selected Asset will be unlinked from the current template.

4. Select **OK**.

The Asset is unlinked from the profile.

Results

- The copy of the profile template that was created when you linked the Asset is deleted.

Next Steps

- [Link a Calibration Task to a Profile](#)

Delete a Calibration Profile


About This Task

Important: Deleting a Calibration Profile deletes all the templates linked to the Equipment, Functional Location, or custom asset in the profile. It does not, however, delete the Profile Template.

Procedure

1. [Access the Calibration Management Overview](#) page.

Tip: You can also [access the Calibration Management Overview page](#) for a hierarchy level.

2. Select the **Calibration Profiles** tab.
The **Calibration Profiles** section appears.
3. Next to each Calibration Profile that you want to delete, select the check box.
4. Select .
The **Delete Calibration Profiles(s)** dialog box appears, asking you to confirm that you want to delete the selected Calibration Profile.
5. Select **OK**.
The Calibration Profile and the Applied Templates associated with the Equipment, Functional Location, or custom asset in the Calibration Profile are also deleted.

Chapter 6

Instrumentation System

Topics:

- [Create an Instrumentation System](#)
- [Create and Link a Calibration Task to Instrumentation System](#)
- [Link Child Assets](#)
- [Define Calibration Task Scope](#)
- [Calibration Assessment](#)
- [Update Instrumentation System](#)
- [Delete an Instrumentation System](#)

Create an Instrumentation System



About This Task

This topic describes how to create an Instrumentation System, link a parent Functional Location, link child assets, define Calibration Task Scope, and perform calibration to get the calibration result summary of the parent Functional Location.

Procedure

1. Access the [Calibration Management Overview](#) page.

Tip: You can also [access the Calibration Management Overview page for a hierarchy level](#).

2. In the workplace, select  .
The **Instrumentation System Overview** page appears, displaying a list of Instrumentation System records.
3. In the upper-left corner of the section, select  .
A **Create Instrumentation System** window appears.
4. As needed, enter values in the [available fields](#).
5. Select **Save**.

Results

The Instrumentation System record is created and appears in a new tab.

Create and Link a Calibration Task to Instrumentation System


About This Task

This topic describes how to create a Calibration Task that is linked to an Instrumentation System's parent asset. After you create or link a Calibration Task, you can define the scope of the task by selecting the assets that need to be calibrated and the associated template used to calibrate that asset. The scope can contain all assets, or a subset of assets defined in the Instrumentation System. The child assets will not be linked to the Calibration Task.

Procedure

1. Access the [Calibration Management Overview](#) page.

Tip: You can also [access the Calibration Management Overview page for a hierarchy level](#).

2. Select  .
The Instrumentation System Overview page appears, displaying a list of Instrumentation System records.
3. Select Instrumentation System ID to open an existing Instrumentation System record.
The root node is selected by default and the **Create Task** button is enabled.
4. Select **Create Task**.
The Calibration Task datasheet is displayed, with default values to create a record.
5. Enter **Task ID** and other values, and save the record.


A new Calibration Task record is created and linked to the parent asset of the Instrumentation System.

Link Child Assets

Procedure

1. Access the [Calibration Management Overview](#) page.

Tip: You can also access the [Calibration Management Overview](#) page for a hierarchy level.

2. In the workplace, select  .
The **Instrumentation System Overview** page appears, displaying a list of Instrumentation System records.
3. Select Instrumentation System ID to open an existing Instrumentation System record.
4. Select **Link Asset**.
The **Asset Finder** window appears.
5. Select one or more assets that are part of the parent Functional Location.
6. Select **Done**.


Note: Make sure the child assets have Calibration Templates defined using Calibration Profiles.

Define Calibration Task Scope

Procedure

1. Access the [Calibration Management Overview](#) page.

Tip: You can also access the [Calibration Management Overview](#) page for a hierarchy level.

2. In the workplace, select  .
The **Instrumentation System Overview** page appears, displaying a list of Instrumentation System records.
3. Select the **Instrumentation System ID** link.
The Instrumentation System record appears in a new section, displaying the list of Calibration Tasks and Linked Assets in the left pane. The Instrumentation System details appear under **DETAILS** section.
4. In the left pane, select a Calibration Task item.
The Calibration Task record displays under **TASK DETAILS** and the initial Calibration Task Scope displays under **TASK SCOPING DETAILS**.
5. In the **TASK SCOPING DETAILS**, select one or more Calibration Templates from each asset group and then select **Save**.
A Calibration Task Scope is created.

Results

The selected Calibration Templates with their assets are displayed under the Calibration Queue section in the Calibration Management Overview page.

Calibration Assessment

Procedure

1. Select each record from the Calibration Queue section and perform manual calibration. You can also perform automated calibration for the templates that are created for specific devices. After the Calibration Events are created for one or more child assets, a Summary Event record is created automatically and stores the calibration result summary based on the child asset Calibration Event results.
2. Approve Calibration Events of the child assets and then approve the Summary Event. The Calibration Task is recycled to its next due date. This also triggers the creation of a new Calibration Task Scope based on the existing scope record.

Update Instrumentation System

Procedure

1. Select **Link Asset** to add one or more child assets to the Instrumentation System.
2. Update Calibration Task Scope by selecting **Calibration Template**.
3. Select **Create Task** to add more calibration task records to define different Calibration Task Scope for each calibration task.

Delete an Instrumentation System



About This Task

This topic describes how to delete an Instrumentation System.

Procedure

1. Access the [Calibration Management Overview](#) page.

Tip: You can also [access the Calibration Management Overview](#) page for a hierarchy level.

2. In the workplace, select  . The **Instrumentation System Overview** page appears, displaying a list of Instrumentation System records.
3. Next to each Instrumentation System record that you want to delete, select the check box.
4. Select  . The **Delete Instrumentation System(s)** window appears, asking you to confirm whether you want to delete the selected record(s) and all links to other records.
5. Select **Yes**.

Results

The selected Instrumentation System record(s) are deleted.

Note: You cannot delete the records that are linked to the Summary Events.

Chapter 7

Calibration Tasks

Topics:

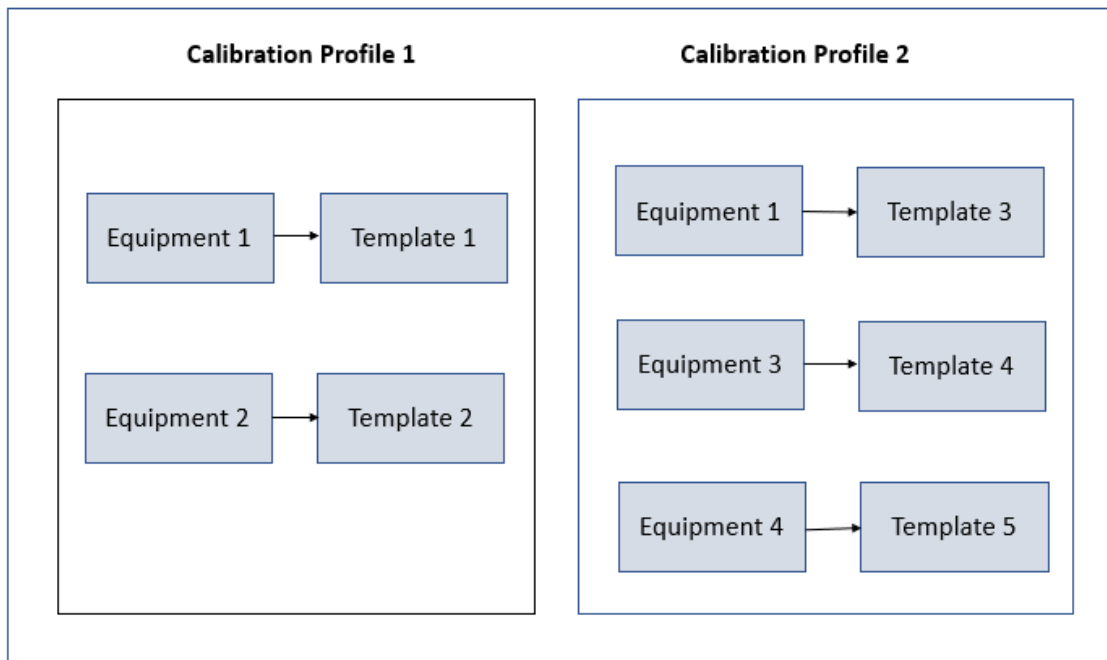
- [About Calibration Task](#)
- [Access a Calibration Task](#)
- [Link a Calibration Task to a Profile](#)
- [Filter Calibration Tasks](#)
- [Perform Manual Calibration](#)
- [Unlink a Calibration Task from a Profile](#)
- [Delete a Calibration Task](#)

About Calibration Task

A Calibration Task record stores details about a calibration task that should be performed by a given user for Calibration Management. Specifically, these records store scheduled dates for the next time the calibrations should be performed.

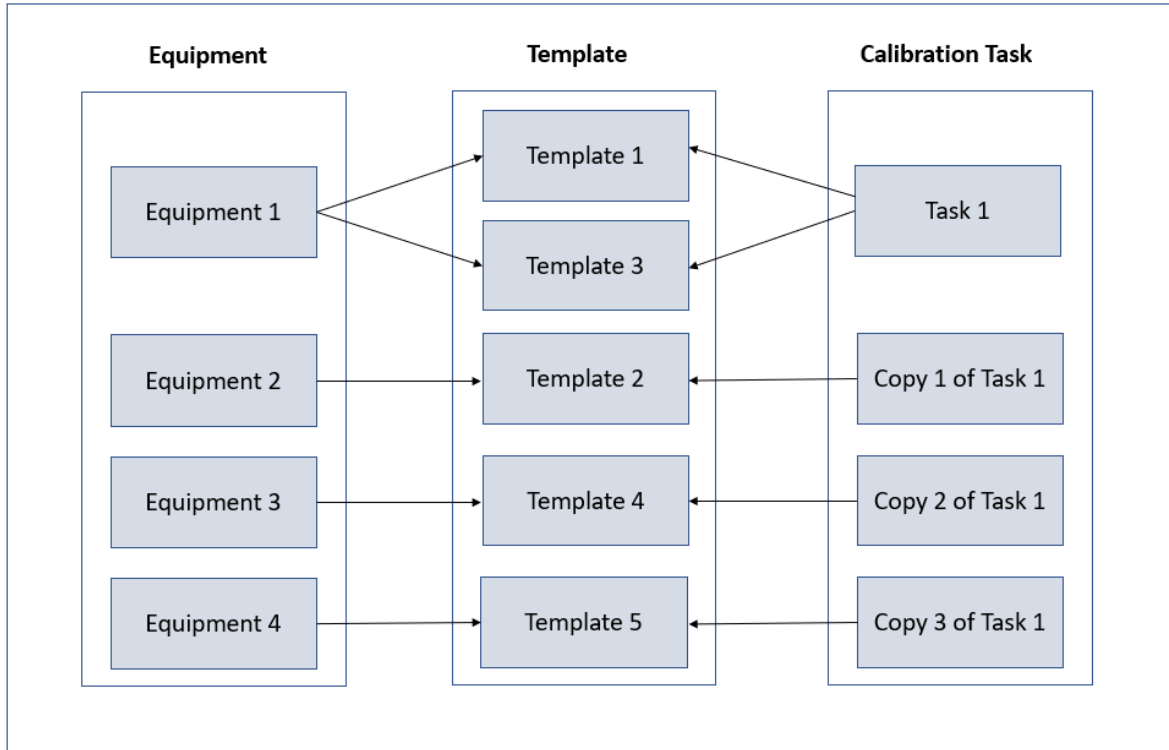
Calibration Tasks are linked to Calibration Profiles. After you link a Calibration Task to one or more profiles, GE Digital APM creates a copy of the task for each Profile and Asset combination.

For example, suppose you have two Calibration Profiles, Profile 1 and Profile 2, which are associated with the Equipment and Template, as shown in the following diagram:



Note that Equipment 1 is associated with Profile 1 (Template 1) as well as Profile 2 (Template 3).

Suppose you have created Task 1 to link to all the Equipment records in Profile 1 and Profile 2. GE Digital APM creates four Calibration Tasks, and links them to the Equipment and Template as shown in the following image. Note that since Template 1 and Template 3 are linked with the same Equipment, the same Task will be linked to both the Templates.



Each copy of the Calibration Task appears in the **Calibration Queue** section of the **Calibration Management Overview** page.

After a calibration is performed and the Calibration Event that is linked to the Asset is closed, the Calibration Task is updated such that:

- The Last Date field reflects the date on which the calibration event was performed.
- The Next Date field is the date on which the calibration is due for that asset.

Access a Calibration Task

Procedure

1. Access the [Calibration Management Overview](#) page.

Tip: You can also [access the Calibration Management Overview page for a hierarchy level](#).

Note: You can also access a calibration task from the **Calibration Queue** tab. Select the **Calibration Queue** tab, and in the **Task** column, select the required task.

2. Select the **Calibration Profiles** tab.
The **Calibration Profiles** section appears, displaying a list of profiles.
3. Select the check boxes that correspond to the Calibration Profiles for which you want to access the Calibration Tasks.
4. Select **Manage Tasks**.

Note: This workflow is used to access calibration tasks for multiple calibration profiles.

You can also navigate to **Manage Calibration Tasks** page from the Calibration Profile datasheet.

5. For the profile whose calibration task you want to access, select the corresponding link in the **PROFILE ID** column.


The Calibration Profile datasheet appears.

6. Select **Manage Tasks**.

Note: This workflow is used to access calibration tasks for a single calibration profile.

The **Manage Calibration Tasks** page appears, displaying the template in the selected profile. If a task has already been linked to any of these templates through the asset, it appears as a link in the **TASK ID** column.

7. In the **TASK ID** column, select the link for the task that you want to access.
The datasheet for the selected Calibration Task appears.

Note: As needed, you can modify the values in the [available fields](#), and then select  to save your changes.

Link a Calibration Task to a Profile

Before You Begin

If you want to replace an existing linked task with a new task, [unlink the existing task](#).

About This Task

This topic describes how to link a Calibration Task to one or more Calibration Profiles by creating a new Calibration Task or selecting an existing one. After you link a Calibration Task to one or more profiles, GE Digital APM creates a copy of the task for each Profile and Asset combination.

Procedure

1. Access the [Calibration Management Overview](#) page.

Tip: You can also [access the Calibration Management Overview](#) page for a hierarchy level.

2. Select the **Calibration Profiles** tab.
The **Calibration Profiles** section appears, displaying a list of profiles.
3. Select the check boxes that correspond to the Calibration Profiles for which you want to access the Calibration Tasks.
4. Select **Manage Tasks**.

Note: This workflow is used to access the calibration tasks for multiple calibration profiles.

You can also navigate to **Manage Calibration Tasks** page from the Calibration Profile datasheet.

5. For the profile whose calibration task you want to access, select the corresponding link in the **PROFILE ID** column.

The Calibration Profile datasheet appears.

6. Select **Manage Tasks**.

Note: This workflow is used to access calibration tasks for a single calibration profile.

The **Manage Calibration Tasks** page appears, displaying the template in the selected profile. If a task has already been linked to any of these templates through the asset, it appears as a link in the **TASK ID** column.

7. Select the templates for which you want to link a task.
8. If you want to create a new task:
 - a) In the page, select **Link Task**, and then select **Create New Task**.
A blank datasheet for a Calibration Task appears.
 - b) As needed, enter values in the [available fields](#).

- c) In the window, select **Save**.
The newly created task, along with any existing tasks, is also linked to the selected template. A Calibration Task is created for each selected template (if it does not already exist).
9. If you want to link an existing task:
- a) In the page, select **Link Task**, and then select **Assign Existing Task**.
The **Search** window appears.
 - b) In the **Look in** box, select Calibration Task, and then, using the other boxes in the window, refine your search as needed.
A list of Calibration Tasks appears.
 - c) Select the task that you want to link, and then select **OK**.
A copy of the Calibration Task is created for each selected template (if it does not already exist).

Results

In the **Calibration Management Overview** page, in the **Calibration Queue** section, a Calibration Task appears for each template that you have selected.

Next Steps


- If you are performing an automated calibration, [send the work order to the documenting process calibrator](#).
- If you are [performing a manual calibration](#), perform the calibration, and then [create a manual calibration task](#) to store the readings.

Filter Calibration Tasks

About This Task

By default, the tasks in the **Calibration Queue** section of the **Calibration Management Overview** page are filtered based on [the date range specified in the Calibration Administration](#) page. This topic describes how to filter these tasks based on a different date range.

Procedure

1. [Access the Calibration Management Overview](#) page.
Tip: You can also [access the Calibration Management Overview](#) page for a hierarchy level.
2. Select the **Calibration Queue** tab.
The **Calibration Queue** section appears, displaying a list of Calibration Tasks that are not yet performed. If a Calibration is in progress or pending approval, the associated Calibration Task is also listed in this section.
3. In the section, select , and then enter the date range to filter the tasks.
4. Select **Apply**.
The Calibration Tasks are filtered based on the date range that you have specified. The values in the Next Date field for these tasks fall within the date range.

Next Steps

- [Perform Manual Calibration](#)

Perform Manual Calibration


Before You Begin

- [Link a Calibration Task](#)
- [Perform the calibration](#)

About This Task

This topic describes how to create a Calibration (Event) manually from a Calibration Task. In addition to tasks that use a manual template, you can perform manual calibration on tasks that use the Fluke 74X-75X template.

Procedure

1. Access the [Calibration Management Overview](#) page.
Tip: You can also [access the Calibration Management Overview](#) page for a hierarchy level.
2. Select the **Calibration Queue** tab.
The **Calibration Queue** section appears, displaying a list of Calibration Tasks that are due.
3. Select the check box that corresponds to the Calibration Task that you want to perform, and then, in the section, select **Manual Calibration**.
A blank datasheet for the Calibration appears.
4. As needed, enter values in the [available fields](#), and then, in the datasheet, select .
The Calibration is created and linked to the Calibration Task, Asset, and the Applied Profile (that is, template linked to the Asset).

Next Steps

- [Change the State of a Calibration](#)
- [Propose a recommendation](#) to improvise the calibration strategy.

Unlink a Calibration Task from a Profile

About This Task

This topic describes how to unlink a Calibration Task from one or more Calibration Templates in a profile.

Procedure

1. Access the [Calibration Management Overview](#) page.
Tip: You can also [access the Calibration Management Overview](#) page for a hierarchy level.
2. Select the **Calibration Profiles** tab.
The **Calibration Profiles** section appears, displaying a list of profiles.
3. Select the check boxes that correspond to the profiles from which you want to unlink a task.
4. In the upper-right corner of the section, select **Manage Tasks**.
The **Manage Calibration Tasks** page appears, displaying the list of templates in the profiles that you have selected. If a task has already been linked to any of these templates, it appears as a hyperlink.

Note: You can also access the **Manage Calibration Tasks** page from the Calibration Profile datasheet. In the **Calibration Profiles** section, select a link in the **PROFILE ID** column to access the Calibration Profile datasheet, and then select **Manage Tasks**.

5. Select the templates from which you want to unlink a task.
6. In the upper-right corner of the page, select **Unlink Task**.
The tasks are unlinked from the profiles.

Results

- In the **Calibration Management Overview** page, in the **Calibration Queue** section, the records that correspond to the tasks that you have unlinked are removed from the list.

Delete a Calibration Task

About This Task


This topic describes how to delete a Calibration Task.

Procedure

1. Access the [Calibration Management Overview](#) page.

Tip: You can also [access the Calibration Management Overview page for a hierarchy level](#).

Note: You can also access a calibration task by selecting the **Calibration Queue** tab, and then selecting the required task in the **Task** column.

2. Select the **Calibration Profiles** tab.
The **Calibration Profiles** section appears, displaying a list of profiles.
3. Next to each profile linked to the task that you want to delete, select the check box.
4. Select **Manage Tasks**.
The **Manage Calibration Tasks** page appears, displaying the list of templates for the selected profiles. If a task has already been linked to any of these templates through the asset, it appears as a link in the **TASK ID** column.
5. Select the link corresponding to the task that you want to delete in the **TASK ID** column.
The datasheet for the selected Calibration Task appears.
6. Select , and then select **Delete**.
The calibration task is deleted.

Chapter 8

Automated Calibration

Topics:

- [About Automated Calibration](#)
- [Supported Software and Devices](#)
- [Verify Calibrator Settings for Fluke 74X - 75X or Fluke 729 FC](#)
- [Verify Calibrator Settings for CMX](#)
- [Verify Calibrator Settings for GE Druck](#)
- [Send Data to a Calibrator](#)
- [Receive Data from a Calibrator](#)
- [Fluke Task Management](#)
- [Data Validation Error Codes](#)

About Automated Calibration

An automated calibration is one that is performed by using a calibrator. Calibration Management supports Fluke and GE Druck calibrators for automated calibration. It also supports automated calibration using the Beamex CMX calibration software.

Data Sent for Calibration

For each Calibration task, when you send calibration data to a Fluke Calibrator, a GE Druck Calibrator, or the Beamex CMX calibration software, information about the type of calibration that should be performed for an asset is exported. This information is stored in the Calibration Templates linked to the Asset records. These Asset records represent the asset that contain calibration measurements to be collected.

If you have sent calibration data to a Fluke Calibrator or a GE Druck Calibrator, the calibration data (i.e., the input values) are transferred to the calibrator.

For each calibration data that is sent to the Beamex CMX calibration software, a corresponding work order is created and stored in the folder path specified in the [CMX Settings](#) section in the Application Settings for Calibration Management. In the Beamex CMX calibration software, to represent the Hierarchy of the asset that will be calibrated, the Asset Hierarchy is created.

Data Received From Calibration

When you receive calibration data from a Fluke Calibrator, a GE Druck Calibrator, or the Beamex CMX calibration software, the results of selected calibrations are imported into GE Digital APM. After the data is imported, GE Digital APM will create one Calibration record for each calibration that you have selected, which appear as [Calibration Events](#) in the **Calibration Events** section. The Calibration records are populated with the values that you entered in the calibrator or Beamex CMX calibration software when you performed the calibration. You cannot save duplicate calibration data. If you saved calibration data twice in the calibrator, only one Calibration record is created in GE Digital APM after you receive data from the calibrator.

If you sent calibration data to a Fluke Calibrator, a GE Druck Calibrator, or the Beamex CMX calibration software, only those calibrations that were performed will be received in GE Digital APM. You must take the necessary action to complete calibrations that were not performed.

If you have received calibration data from a Fluke Calibrator or a GE Druck Calibrator, the fields in the **Test Equipment** section of the Calibration datasheet are populated with the details of the calibrator.

If you have received calibration data from Beamex CMX calibration software, the Calibration Passed field of the Calibration record is populated with a value to indicate whether the calibration passed or failed.

Supported Software and Devices

Table 1:

| Device | Notes |
|--|--|
| CMX Calibration Management Software | <ul style="list-style-type: none"> • CMX Calibration Management Software is a third-party software that supports different calibration types as per the specifications. • GE Digital APM maintains a replica of the templates that CMX Calibration Management Software supports. You can modify the templates manually if there are any changes. • No field mapping configuration is provided between GE Digital APM and CMX Calibration Management Software. |
| Fluke 744 / Fluke 754 Documenting Process Calibrator | <ul style="list-style-type: none"> • GE Digital APM supports analog calibration, discrete calibration, and functional test calibration. It also supports custom calibration where you can manually enter input and output values into the device during calibration. • Pressure, Temperature, Voltage, Current, Frequency, and Resistance are supported as Input and Output Modes. |
| Fluke 729 Automatic Pressure Calibrator | <ul style="list-style-type: none"> • GE Digital APM supports analog calibration and discrete calibration. It does not support custom calibration. Therefore, you cannot manually enter input and output values into the device during calibration. • Pressure, Current, and Voltage are supported as Input and Output Modes. • Existing catalog queries that are bound to Fluke 74x are also applicable to Fluke 729. |
| GE Druck Calibrator | <ul style="list-style-type: none"> • GE Digital APM supports analog calibration and discrete calibration. It does not support custom calibration. Therefore, you cannot manually enter input and output values into the device during calibration. • It does not support square root function. • Pressure, Temperature, Voltage, Current, Frequency, and Resistance are supported as Input and Output Modes. |

Verify Calibrator Settings for Fluke 74X - 75X or Fluke 729 FC

About This Task

Calibrator settings are saved for a user and for a data source. If you log in as another user, or change the data source, you must reconfigure the calibrator settings.

Procedure

1. Access the [Calibration Management Overview](#) page.

- Tip:** You can also [access the Calibration Management Overview page](#) for a hierarchy level.
2. Select the **Calibration Tools** tab.
The **Calibration Tools** section appears.
 3. In the section, select **Calibrator Settings**.
The **Calibrator Settings** window appears.
 4. In the **Select Device** box, select Fluke 74X - 75X or Fluke 729 FC.
The calibration settings for Fluke 74X - 75X or Fluke 729 FC appears.
 5. In the **COM Port** box, select the communication port number that the calibrator is connected to.

Important: GE Digital APM supports port numbers in the range from COM1 through COM4. If the communication port number of the calibrator does not fall within this range, you must change the value in the Device Manager, or connect the calibrator to a different port.

6. If you want to test the connection of the calibrator, select the **Perform Connection Test** check box.
Note: The **Baud Rate** box contains the value 9600. You cannot change this value.
7. In the **Device Service Settings Service Port** box, enter the value of the service port number that you have configured. The default value in the **Device Service Settings Service Port** box is 2014.
8. In the window, select **Done**.

Note: If you had selected the **Perform Connection Test** check box, then the connection between GE Digital APM and the calibrator is tested.

- If the calibrator is not connected properly or if the communication port of the calibrator does not match the value in the **COM Port** box, then a message appears. If this occurs, verify the connection, and then select **Continue**.
- If you have not installed the Meridium Device Service, then a message appears, asking you to install it. You must install the Meridium Device Service, and then select **Continue**.
- If the connection is successful, then the details appear in the **Device Log** box.

The calibration settings are saved.

Next Steps

- [Send Data to a Calibrator](#)

Verify Calibrator Settings for CMX

About This Task

Calibrator settings are saved for a user and for a data source. If you log in as another user, or change the data source, you must reconfigure the calibrator settings.

Procedure

1. [Access the Calibration Management Overview page](#).
Tip: You can also [access the Calibration Management Overview page](#) for a hierarchy level.
2. Select the **Calibration Tools** tab.
The **Calibration Tools** section appears.
3. In the upper-right corner of the section, select **Calibrator Settings**.
The **Calibrator Settings** window appears.
4. In the **Select Device** box, select CMX.
The calibration settings for CMX appears.
5. If you want to test if Meridium Device Service utility is installed and running, select the **Perform Connection Test** check box.

6. In the **Device Service Settings Service Port** box, enter the value of the service port number that you have configured. The default value in the **Device Service Settings Service Port** box is 2014.
7. In the lower-right corner of the window, select **Done**.

Note: If you had selected the **Perform Connection Test** check box, the GE Digital APM verifies if the Meridium Device Service has been installed.

- If you have not installed the Meridium Device Service, then a message appears, asking you to install it. You must install the Meridium Device Service, and then select **Continue**.
- If the connection is successful, then the details appear in the **Device Log** box.

Next Steps

- [Send Data to a Calibrator](#)

Verify Calibrator Settings for GE Druck

About This Task

Calibrator settings are saved for a user and for a data source. If you log in as another user, or change the data source, you must reconfigure the calibrator settings.

Procedure

1. Access the [Calibration Management Overview](#) page.

Tip: You can also [access the Calibration Management Overview page for a specific hierarchy level](#).

2. Select the **Calibration Tools** tab.
The **Calibration Tools** section appears.
3. In the upper-right corner of the section, select **Calibrator Settings**.
The **Calibrator Settings** window appears.
4. In the **Select Device** box, select one of the following calibrators:

- **Druck DPI611** (Druck DPI611 - Pressure Calibrator)
- **Druck DPI612** (Druck DPI612 - Flex Pressure Calibrator)
- **Druck DPI620** (Druck DPI620 - Multifunction Calibrator)
- **Druck DPI620G (Genii)** (Druck DPI620G - Advanced Multifunction Calibrator, HART/Fieldbus Communicator)
- **Druck DPI620G-IS (Genii)** (Druck DPI620G-IS - Intrinsically Safe Advanced Multifunction Calibrator, HART/Fieldbus Communicator)
- **Druck DPI620-IS** (Druck DPI620-IS - Intrinsically Safe Multifunction Calibrator)

The calibration settings for the selected calibrator appear.

5. In the **Select Serial Number** box, select the serial number of the GE Druck calibrator.
The **Done** button is enabled.
6. If you want to test the connection of the calibrator, select the **Perform Connection Test** check box.
7. In the **Device Service Settings Service Port** box, enter the value of the service port number that you have configured. The default value in the **Device Service Settings Service Port** box is 2014.
The **Done** button is enabled.
8. In the lower-right corner of the window, select **Done**.

Note: If you selected the **Perform Connection Test** check box, then the connection between GE Digital APM and the calibrator is tested.

- If you did not install the Meridium Device Service, then a message appears, asking you to install it. You must install the Meridium Device Service, and then select **Continue**.
- If the connection is successful, then the details appear in the **Device Log** box.

The calibration settings are saved.

Next Steps

- [Send Data to a Calibrator](#)

Send Data to a Calibrator

Before You Begin

- You can send Calibration data to a calibrator only if you are a member of the MI Devices Administrators Security Group.
- When you send data to a calibrator, the calibration data that already exists in the calibrator is deleted. Therefore, if you have data in the calibrator that you want to save, you must [transfer the data to GE Digital APM](#).

Note: You can activate the enhanced workflow on handling unsaved results and unfinished tasks in **Fluke 74x - 75x** and **Fluke 729 FC** Calibrators by selecting the **Enable Fluke Task Management** check box in the **Admin** section under **Automated Calibration Settings** tab. For more information, refer [Fluke Task Management](#).

- When you first try to send data to or receive data from the calibrator, if you have not installed the Meridium Device Service, you will be prompted to install it. This service must be installed on any machine that you will use with the calibrators.

Important: When a new device integration is introduced in the Calibration Management module, the Meridium Device Service utility is also modified to support the device. Therefore, if you have recently upgraded the GE Digital APM from an earlier version, you must uninstall the previous version of the Meridium Device Service utility, download the utility again, and then reinstall the downloaded version of the utility.

- Verify the calibrator settings for [Fluke](#), [CMX](#), and [GE Druck](#) documenting process calibrators.

Additionally, to perform automated calibration by using the Beamex CMX calibration software, the following additional prerequisites must be fulfilled:

- Beamex CMX calibration software must be installed and running on the machine that you want to connect to the calibrator.
- Beamex Bridge software must be installed and running on the machine that you want to connect to the calibrator.

About This Task

This topic describes how to send Calibration data to a calibrator when performing an automated calibration.

Note:

You can perform manual calibration on tasks that use the Fluke 74X-75X template.

Procedure

1. [Access the Calibration Management Overview](#) page.

Tip: You can also [access the Calibration Management Overview](#) page for a hierarchy level.

2. Select the **Calibration Queue** tab.
The **Calibration Queue** section appears, displaying a list of calibration queue records.
3. In the row for each calibration queue record that you want to send to the calibrator, select the check box.
4. In the section, select **Send for Calibration**.
The **Send for Calibration** window appears, displaying the **Select Calibration Method** section.
5. In the **Send To** box, select the calibrator type that you want to use for calibration. You can select one of the following options:
 - If you want to send the data to a Fluke documenting process calibrator, select **Fluke 74X – 75X**.
Note: You can activate the enhanced workflow on handling unsaved results and unfinished tasks in **Fluke 74x - 75x** Calibrators by selecting the **Enable Fluke Task Management** check box in the **Admin** section under **Automated Calibration Settings** tab. For more information, refer [Fluke Task Management](#).
 - If you want to send the data to a Fluke Pressure documenting process calibrator, select **Fluke 729 FC**.
Note: You can activate the enhanced workflow on handling unsaved results and unfinished tasks in **Fluke 729 FC** Calibrators by selecting the **Enable Fluke Task Management** check box in the **Admin** section under **Automated Calibration Settings** tab. For more information, refer [Fluke Task Management](#).
 - If you want to send the data to a GE Druck Calibrator, select one of the following devices:
 - **Druck DPI611** (Druck DPI611 - Pressure Calibrator)
 - **Druck DPI612** (Druck DPI612 - Flex Pressure Calibrator)
 - **Druck DPI620** (Druck DPI620 - Multifunction Calibrator)
 - **Druck DPI620G (Genii)** (Druck DPI620G – Advanced Multifunction Calibrator, HART/Fieldbus Communicator)
 - **Druck DPI620G-IS (Genii)** (Druck DPI620G-IS - Intrinsically Safe Advanced Multifunction Calibrator, HART/Fieldbus Communicator)
 - **Druck DPI620-IS** (Druck DPI620-IS - Intrinsically Safe Multifunction Calibrator)
 - If you want to use Beamex CMX calibration software for calibration, select **CMX**.
6. In the **Calibrator Device ID** box, select the device ID of the calibrator.
Note: If you have selected **CMX**, the **Calibrator Device ID** box will be disabled.
The calibration driver details, device details, and certification details for the selected device appear.
Note: If you have not verified the calibrator settings, an error message appears below the **Send To** box, stating that the settings for this device have not been configured and the **Next** button will be disabled. If this occurs, you must [verify the settings](#).
7. In the window, select **Next**.
Note: If a test equipment for the selected device has not been created, the **Next** button will be disabled and a validation message will appear, indicating that the test equipment for the device has not been found and that you need to [create a test equipment](#) before proceeding.
The **Validate Selection** section appears, displaying a list of calibration applied templates that are compatible with the device that you selected.
Note: If the selected calibration queue records have not been mapped to the correct device, when you select **Next**, the Calibration Templates will not be loaded and the **Finish** button will be disabled.
8. Select **Validate**, to validate the selected templates before downloading to the Calibrator.
The selected templates are validated and the results appear in the **VALIDATION** column.
9. Select the icon or the text displayed in the **VALIDATION** column, to view the validation results of the template.

The Download Data validation Messages window appears displaying the validation results.

Note: As needed, you can stop the templates download and fix the errors and warnings. For more information on the warnings and errors, refer [Data Validation Error Codes](#) on page 59.

10. Select **Finish**.

The **Sending to Calibrator** section appears, displaying the progress of sending the data to the calibrator. The Send completed message indicates that the data has been sent to the calibrator.

When the download starts, each template record gets validated again. The records with validation errors are skipped from downloading and the records with warnings and no errors are sent to the calibrator. Similar warnings may appear when performing the calibration using the calibrator.

11. After the download operation completes, you can view the validation result logs at the path where the Meridium Device Service is installed.

Note: If the Meridium Device Service is not installed or not running, an error message appears, indicating that the Meridium Device Service could not be reached. The message also indicates that you need to verify that the service is installed and running. You can select the **Download** link to download the installer. After the service is running, select **Continue** to send the data to the calibrator.

Next Steps

- Perform calibration using the calibrator.
- [Receive data from the calibrator](#).

Receive Data from a Calibrator

Before You Begin

- Install the Meridium Device Service. When you first try to send data to or receive data from the calibrator, if you have not installed the Meridium Device Service, you will be prompted to install it. This service must be installed on any machine that you will use with calibrators.
- [Verify the calibrator settings](#).
- [Send calibration data to the calibrator](#).
- Perform the calibration on the calibrator.
- If you are using the Beamex CMX calibration software to perform automated calibration, the following additional prerequisites must be fulfilled:
 - Beamex CMX calibration software must be installed and running on the machine that you will connect to the calibrator.
 - Beamex Bridge software must be installed and running on the machine that you will connect to the calibrator.

About This Task

This topic describes how to receive data from calibrators that have been calibrated by using an automated calibrator.

Procedure

1. Access the [Calibration Management Overview](#) page.

Tip: You can also [access the Calibration Management Overview](#) page for a hierarchy level.

2. Select the **Calibration Events** tab.

The **Calibration Events** section appears, displaying a list of Calibration event records.

3. In the section, select **Receive from Calibration**.

The **Receive From Device** window appears, displaying the **Select Calibration Method** section.

4. In the **Receive From** box, select the calibrator type that you have used for calibration. You can select one of the following options:

- If you want to receive data from a Fluke documenting process calibrator, select **Fluke 74X - 75X**.
- If you want to receive data from a Fluke Pressure documenting process calibrator, select **Fluke 729 FC**.
- If you want to receive data from a GE Druck Calibrator, select one of the following devices:
 - **Druck DPI611** (Druck DPI611 - Pressure Calibrator)
 - **Druck DPI612** (Druck DPI612 - Flex Pressure Calibrator)
 - **Druck DPI620** (Druck DPI620 - Multifunction Calibrator)
 - **Druck DPI620G (Genii)** (Druck DPI620G – Advanced Multifunction Calibrator, HART/Fieldbus Communicator)
 - **Druck DPI620G-IS (Genii)** (Druck DPI620G-IS - Intrinsically Safe Advanced Multifunction Calibrator, HART/Fieldbus Communicator)
 - **Druck DPI620-IS** (Druck DPI620-IS - Intrinsically Safe Multifunction Calibrator)
- If you want to receive data from the Beamex CMX calibration software for calibration, select **CMX**.

5. In the **Calibrator Device ID** box, select the device ID of the calibrator.

Note: If you have selected **CMX**, the **Calibrator ID** box will be disabled.

The calibration driver details, device details, and certification details for the selected device appear.

6. Select **Next**.

The **Download Calibration Checklists** section appears, displaying a list of calibrations that have been performed on the device.

Tip: If you want to view the progress of the data received, then in the upper-left corner of the section, select **Log**.

7. Next to each calibration data that you want to save, select the check boxes, and then select **Next**. The **Saved Results** section appears, displaying the status of records selected for saving.

After receiving the calibration data, GE Digital APM creates a Calibration record for each calibration that you have selected. If you have used a documenting process calibrator for calibration, then the fields in [the Test Equipment section of each Calibration record created](#) are populated with the details of the calibrator.

8. Select **Finish**.

Note: You can activate the enhanced workflow on handling unsaved results and unfinished tasks in **Fluke 74x - 75x** and **Fluke 729 FC** Calibrators by selecting the **Enable Fluke Task Management** check box in the **Admin** section under **Automated Calibration Settings** tab. For more information, refer [Fluke Task Management](#).

Fluke Task Management

About This Task

This topic describes how to activate enhanced Fluke Task Management workflow.

Procedure

1. In the **Applications** menu, navigate to **ADMIN > Application Settings > Calibration Management**.

- The **Calibration Admin Preferences** page appears, displaying the **Query Paths** workspace, which contains a list of queries used to populate the [Calibration Management Overview](#) page.
2. From the left pane, select the **Automated Calibration Settings** tab.
 3. Select the **Enable Fluke Tasks Management** check box and then select **Save**.

Results

This setting provides the enhanced workflow during Send to Calibrator and Receive From Calibrator functionality for the following device types:

- Fluke 74x – 75x
- Fluke 729 FC

While performing [Send Data to a Calibrator](#), the following check boxes appear if there are unsaved results and/or unfinished tasks found in the Calibrator.

- **Save Results**
 - This check box is selected by default. If you select **Next**, then the unsaved results found in the Calibrator will be automatically saved into GE Digital APM. If there is any record that was sent to Calibrator and was modified or deleted in GE Digital APM before receiving the data from Calibrator or if the same result is uploaded twice then an error message appears while saving the results. In that case you need to navigate to the **Receive From Calibrator** screen and do the upload operation to review the errors.
 - If you deselect this check box and select **Next**, then the unsaved results found in the Calibrator will not be saved into GE Digital APM. All the data in the Calibrator will be erased and newly selected tasks will be downloaded.
- **Reload Unfinished Tasks**
 - This check box is selected by default and it indicates that the unfinished tasks found in the Calibrator will be reloaded back into Calibrator along with newly selected tasks.
 - If you deselect this check box and select **Next**, then the unfinished tasks found in the Calibrator will not be reloaded and it will download the newly selected tasks.

While performing [Receive Data from a Calibrator](#), the **Erase Results** check box appears if there are any errors while saving the records into GE Digital APM

- This check box is selected by default. If you select **Finish**, then all the results will be erased from the Calibrator and the unfinished tasks will be reloaded back to the Calibrator.
- If you deselect this check box and select **Finish**, then the results will not be erased from the Calibrator and the unfinished tasks will not be reloaded.

Data Validation Error Codes

The following table lists the data validation error codes for users within this module.

| Error Code | Description |
|------------|--|
| CME00001 | <p data-bbox="451 254 1365 321">Incorrect number of test points detected when compared to the template strategy.</p> <p data-bbox="451 342 1424 399">This is an error and the template will not be download to the Calibrator. The following are the possible causes of this error:</p> <ul data-bbox="451 415 1395 569" style="list-style-type: none"> <li data-bbox="451 415 1395 472">• The Up Count or Down Count values of the calibration strategy was modified. Hence, the sum of these counts may not be equal to the number of template detail records of the template. <li data-bbox="451 483 1395 569">• In the template, the template detail record has been added or an existing template detail record is deleted. Hence, the template detail records count is not equal to the sum of the Up Count and Down Count values. <p data-bbox="451 590 1409 646">Solution: Update the calibration strategy based on the number of template detail records or add or remove the template detail records to match the strategy defined in the template.</p> |
| CME00002 | <p data-bbox="451 674 1312 703">Test point percentage values must be between 0 to 100.</p> <p data-bbox="451 724 1110 753">This is an error and the template will not be downloaded to the Calibrator.</p> <p data-bbox="451 768 1295 798">Test Point Percentage of one or more template detail records are outside the range of 0 to 100.</p> <p data-bbox="451 814 1424 871">Solution: Verify all template detail records and make sure the test point percentage values are between 0 to 100.</p> |
| CMW00003 | <p data-bbox="451 900 1295 968">Primary Input or Output values are out of range. The selected device may not support this range of values.</p> <p data-bbox="451 989 1417 1079">This is a warning. In this case, you can download the template to the Calibrator. However, you may not be able to perform calibration using the Calibrator. This is because, if the range values used in the template for Voltage, Current, Resistance, and Frequency are out of range, then the calibrator may not support this range.</p> <p data-bbox="451 1096 1409 1155">Solution: Modify the Input and Output range values in the template and make sure that the ranges entered are supported by Calibrator.</p> |
| CME00004 | <p data-bbox="451 1180 1365 1285">Receive Mapping does not exist for the corresponding Send Mapping record of this template. You will not be able to upload the Calibration results back to APM.</p> <p data-bbox="451 1306 1382 1362">This is an error and the template will not be downloaded to the Calibrator. The following are the possible causes:</p> <ul data-bbox="451 1379 1424 1470" style="list-style-type: none"> <li data-bbox="451 1379 1214 1409">• The Send Mapping record set in the template may have been deleted or modified. <li data-bbox="451 1419 1424 1470">• The Receive Mapping does not exist or is not linked to the corresponding Send Mapping that is defined in the template. <p data-bbox="451 1491 1409 1547">Solution: Restore the modified Send Mapping record. Make sure that a Receive Mapping record is available, whose Linked Mapping field is set to the template's Send Mapping ID.</p> |

| Error Code | Description |
|------------|--|
| CME00005 | <p data-bbox="451 258 1382 323">Length of Tag Id value is greater than 30 characters which will be trimmed</p> <p data-bbox="451 359 1287 384">This is a warning and the template will get downloaded. The following are the possible causes:</p> <ul data-bbox="451 401 1411 527" style="list-style-type: none"> <li data-bbox="451 401 1411 457">• The number of characters in the Tag Name field of the template is greater than 32 characters, whereas the Calibrator supports a length of 32 characters. <li data-bbox="451 468 1411 527">• In this case, the tag name value will be trimmed to 32 characters and the template will get downloaded. In the Calibrator, you can observe the trimmed tag ID field ending with the * character. <p data-bbox="451 548 1424 632">Solution: Modify the Tag Name field in the template to make sure that the length of the tag is within 32 characters. You can also modify the Location ID field in the calibration event record after saving the uploaded results in APM.</p> |
| CME00006 | <p data-bbox="451 665 1362 730">Length of Tag Serial number is greater than 32 characters which will be trimmed.</p> <p data-bbox="451 751 1287 777">This is a warning and the template will get downloaded. The following are the possible causes:</p> <ul data-bbox="451 793 1398 951" style="list-style-type: none"> <li data-bbox="451 793 1398 850">• The number of characters in the Tag Serial Number field of the template is greater than 32 characters, whereas the Calibrator supports a length of 32 characters. <li data-bbox="451 861 1398 951">• In this case, the Tag Serial Number value will be trimmed to 32 characters and the template would get downloaded. In the Calibrator, you can observe the trimmed Tag Serial Number field ending with the * character. <p data-bbox="451 972 1424 1056">Solution: Modify the Tag Serial Number field in the template to make sure the length is within 32 characters. You can also modify the Instrument Serial Number field in the calibration event record after saving the uploaded results in APM.</p> |

| Error Code | Description | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
|-------------------------------|--|-----------|------------------|----------------------|----------|--------------------------|----------------|------------|-------------|-----------------|-----------------|-------------|--------------|-----------------------------|---------------|-------------------|-------------|-------------------|-------------------|---------------------------|------------|--------------------|--------------|--------------------|--------------------|----------------------|-------------|-----------|------------------|----------------------|----------|--------------------------|----------------|------------|-------------|-------------------------------|---------------|-------------|--------------|-----------------------------|---------------|-------------------|-------------|-------------------|-------------------|---------------------------|------------|
| CME00007 | <p data-bbox="451 258 1365 321">The send mapping record is missing the following required field mappings</p> <p data-bbox="451 359 1414 415">This is an error and the template will not get downloaded. The possible cause is that the following fields may have been deleted or modified in the Send Mapping record:</p> <p data-bbox="451 436 841 457">Required field mapping for Analog template</p> <table border="1" data-bbox="451 501 1414 1157"> <thead> <tr> <th data-bbox="451 501 932 548">APM Field</th> <th data-bbox="932 501 1414 548">Calibrator Field</th> </tr> </thead> <tbody> <tr> <td data-bbox="451 548 932 594">Calibration Strategy</td> <td data-bbox="932 548 1414 594">STRATEGY</td> </tr> <tr> <td data-bbox="451 594 932 640">Calibration Template Key</td> <td data-bbox="932 594 1414 640">UNIQUE_TASK_ID</td> </tr> <tr> <td data-bbox="451 640 932 686">Input Mode</td> <td data-bbox="932 640 1414 686">SOURCE_MODE</td> </tr> <tr> <td data-bbox="451 686 932 732">Max Error Limit</td> <td data-bbox="932 686 1414 732">ERROR_TOLERANCE</td> </tr> <tr> <td data-bbox="451 732 932 779">Output Mode</td> <td data-bbox="932 732 1414 779">MEASURE_MODE</td> </tr> <tr> <td data-bbox="451 779 932 825">Percent of Scale Test Point</td> <td data-bbox="932 779 1414 825">SCALE_PERCENT</td> </tr> <tr> <td data-bbox="451 825 932 871">Primary Input LRV</td> <td data-bbox="932 825 1414 871">SOURCE_ZERO</td> </tr> <tr> <td data-bbox="451 871 932 917">Primary Input URV</td> <td data-bbox="932 871 1414 917">SOURCE_FULL_SCALE</td> </tr> <tr> <td data-bbox="451 917 932 963">Primary Input Range Units</td> <td data-bbox="932 917 1414 963">SOURCE_UOM</td> </tr> <tr> <td data-bbox="451 963 932 1010">Primary Output LRV</td> <td data-bbox="932 963 1414 1010">MEASURE_ZERO</td> </tr> <tr> <td data-bbox="451 1010 932 1056">Primary Output URV</td> <td data-bbox="932 1010 1414 1056">MEASURE_FULL_SCALE</td> </tr> <tr> <td data-bbox="451 1056 932 1102">Primary Output Units</td> <td data-bbox="932 1056 1414 1102">MEASURE_UOM</td> </tr> </tbody> </table> <p data-bbox="451 1173 846 1194">Require Field Mapping for Discrete Template</p> <table border="1" data-bbox="451 1239 1414 1745"> <thead> <tr> <th data-bbox="451 1239 932 1285">APM Field</th> <th data-bbox="932 1239 1414 1285">Calibrator Field</th> </tr> </thead> <tbody> <tr> <td data-bbox="451 1285 932 1331">Calibration Strategy</td> <td data-bbox="932 1285 1414 1331">STRATEGY</td> </tr> <tr> <td data-bbox="451 1331 932 1377">Calibration Template Key</td> <td data-bbox="932 1331 1414 1377">UNIQUE_TASK_ID</td> </tr> <tr> <td data-bbox="451 1377 932 1423">Input Mode</td> <td data-bbox="932 1377 1414 1423">SOURCE_MODE</td> </tr> <tr> <td data-bbox="451 1423 932 1470">Engineering Units Error Limit</td> <td data-bbox="932 1423 1414 1470">SWT_TOLERANCE</td> </tr> <tr> <td data-bbox="451 1470 932 1516">Output Mode</td> <td data-bbox="932 1470 1414 1516">MEASURE_MODE</td> </tr> <tr> <td data-bbox="451 1516 932 1562">Percent of Scale Test Point</td> <td data-bbox="932 1516 1414 1562">SCALE_PERCENT</td> </tr> <tr> <td data-bbox="451 1562 932 1608">Primary Input LRV</td> <td data-bbox="932 1562 1414 1608">SOURCE_ZERO</td> </tr> <tr> <td data-bbox="451 1608 932 1654">Primary Input URV</td> <td data-bbox="932 1608 1414 1654">SOURCE_FULL_SCALE</td> </tr> <tr> <td data-bbox="451 1654 932 1701">Primary Input Range Units</td> <td data-bbox="932 1654 1414 1701">SOURCE_UOM</td> </tr> </tbody> </table> | APM Field | Calibrator Field | Calibration Strategy | STRATEGY | Calibration Template Key | UNIQUE_TASK_ID | Input Mode | SOURCE_MODE | Max Error Limit | ERROR_TOLERANCE | Output Mode | MEASURE_MODE | Percent of Scale Test Point | SCALE_PERCENT | Primary Input LRV | SOURCE_ZERO | Primary Input URV | SOURCE_FULL_SCALE | Primary Input Range Units | SOURCE_UOM | Primary Output LRV | MEASURE_ZERO | Primary Output URV | MEASURE_FULL_SCALE | Primary Output Units | MEASURE_UOM | APM Field | Calibrator Field | Calibration Strategy | STRATEGY | Calibration Template Key | UNIQUE_TASK_ID | Input Mode | SOURCE_MODE | Engineering Units Error Limit | SWT_TOLERANCE | Output Mode | MEASURE_MODE | Percent of Scale Test Point | SCALE_PERCENT | Primary Input LRV | SOURCE_ZERO | Primary Input URV | SOURCE_FULL_SCALE | Primary Input Range Units | SOURCE_UOM |
| APM Field | Calibrator Field | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Calibration Strategy | STRATEGY | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Calibration Template Key | UNIQUE_TASK_ID | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Input Mode | SOURCE_MODE | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Max Error Limit | ERROR_TOLERANCE | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Output Mode | MEASURE_MODE | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Percent of Scale Test Point | SCALE_PERCENT | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Primary Input LRV | SOURCE_ZERO | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Primary Input URV | SOURCE_FULL_SCALE | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Primary Input Range Units | SOURCE_UOM | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Primary Output LRV | MEASURE_ZERO | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Primary Output URV | MEASURE_FULL_SCALE | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Primary Output Units | MEASURE_UOM | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| APM Field | Calibrator Field | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Calibration Strategy | STRATEGY | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Calibration Template Key | UNIQUE_TASK_ID | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Input Mode | SOURCE_MODE | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Engineering Units Error Limit | SWT_TOLERANCE | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Output Mode | MEASURE_MODE | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Percent of Scale Test Point | SCALE_PERCENT | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Primary Input LRV | SOURCE_ZERO | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Primary Input URV | SOURCE_FULL_SCALE | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Primary Input Range Units | SOURCE_UOM | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |

| Error Code | Description | | | | | | | | | | | | |
|--------------------------|--|-----------|------------------|----------------------|----------|--------------------------|----------------|-------------|---------------|---------------|--------------------|-----------------|-----------|
| | <p data-bbox="451 258 922 285">Required Field Mapping for Functional Test Template</p> <table border="1" data-bbox="451 327 1414 630"> <thead> <tr> <th data-bbox="451 327 932 375">APM Field</th> <th data-bbox="932 327 1414 375">Calibrator Field</th> </tr> </thead> <tbody> <tr> <td data-bbox="451 375 932 426">Calibration Strategy</td> <td data-bbox="932 375 1414 426">STRATEGY</td> </tr> <tr> <td data-bbox="451 426 932 476">Calibration Template Key</td> <td data-bbox="932 426 1414 476">UNIQUE_TASK_ID</td> </tr> <tr> <td data-bbox="451 476 932 527">Instruction</td> <td data-bbox="932 476 1414 527">FUNC_INSTRUCT</td> </tr> <tr> <td data-bbox="451 527 932 577">Response Type</td> <td data-bbox="932 527 1414 577">FUNC_RESPONSE_TYPE</td> </tr> <tr> <td data-bbox="451 577 932 627">Sequence Number</td> <td data-bbox="932 577 1414 627">FUNC_STEP</td> </tr> </tbody> </table> <p data-bbox="451 644 1333 701">Solution: Restore the Send Mapping record and make sure the required field mapping exists before downloading the templates to the Calibrator.</p> | APM Field | Calibrator Field | Calibration Strategy | STRATEGY | Calibration Template Key | UNIQUE_TASK_ID | Instruction | FUNC_INSTRUCT | Response Type | FUNC_RESPONSE_TYPE | Sequence Number | FUNC_STEP |
| APM Field | Calibrator Field | | | | | | | | | | | | |
| Calibration Strategy | STRATEGY | | | | | | | | | | | | |
| Calibration Template Key | UNIQUE_TASK_ID | | | | | | | | | | | | |
| Instruction | FUNC_INSTRUCT | | | | | | | | | | | | |
| Response Type | FUNC_RESPONSE_TYPE | | | | | | | | | | | | |
| Sequence Number | FUNC_STEP | | | | | | | | | | | | |

Chapter 9

Calibration Events

Topics:

- [About Calibration Event](#)
- [About Functional Test](#)
- [Create a Calibration Event from the Calibration Events Section](#)
- [Create a Calibration Event Using the Calibration Queue Section](#)
- [Access a Calibration](#)
- [Access a Calibration Summary Event](#)
- [Access the Recommended Actions Pane](#)
- [Access a Calibration Graph](#)
- [Change the State of a Calibration](#)
- [Create a Recommendation](#)
- [Generate a Calibration Report](#)
- [Delete a Calibration](#)

About Calibration Event

Calibration records (also called Calibration Events) store a snapshot of the current condition of the asset that is calibrated. They are used to store the readings you have taken while calibrating a asset and to verify whether the calibration has passed or failed.

You can perform calibration in one of the following ways:

- **Manual Calibration:** When you perform a manual calibration, you will [manually create Calibration records](#) and enter the results into the record.
- **Automated Calibration:** To perform automated calibration, you will use a calibrator. In this case, Calibration records are automatically created in GE Digital APM after receiving data from the calibrator.

About Functional Test

Calibration Template, Functional Test records are specific types of Calibration Templates that allow you to perform functional tests on the asset. A functional test consists of questions and possible responses to that question.

Like other Calibration Template records, Calibration Template, Functional Test records contain setup information for functional tests. They are linked to Calibration Template Detail, Functional Test records, which store the following information that you can use to define a custom functional test for an asset:

- Instructions that describe the steps you should perform.
- Responses that correspond with each instruction.
- The sequence in which the instructions should be carried out.

Together, the combination of one Calibration Template, Functional Test record and one or more Calibration Template Detail, Functional Test records make up a single functional test.

Although Calibration Template, Functional Test records store different information than other Calibration Templates, they function the same way. You can also perform a manual functional test in the same way you perform a manual calibration, except that you should use a printed copy of the Functional Test Calibration Field Report to perform the specified functional test and write the results of the test on the printed report. The Functional Test Field Calibration Report displays the information that you defined in a Calibration Template, Functional Test record. You can print the report and use it to manually record the results of the functional test in the field, and then you can transfer the results from the report to a Calibration, Functional Test record in GE Digital APM.

Example: Functional Test

Suppose you want to record information about the physical condition of the wires that are attached to a boiler. In this case, you might create the following functional test:

What is the condition of the wires?

- Rusted
- Stripped
- Loose
- Dirty
- Acceptable

Create a Calibration Event from the Calibration Events Section

About This Task

This topic describes how to create the following Calibration records manually without using a Calibration Template:


- Calibration, Analog
- Calibration, Discrete
- Calibration, Weight Scale
- Calibration, Single-Component Analyzer
- Calibration, Multi-Component Analyzer
- Calibration, Functional Test

This topic describes how to create a Calibration Event from the **Calibration Events** section. You can also [Create a Calibration Event Using the Calibration Queue Section](#) on page 66.

Procedure


1. Access the [Calibration Management Overview](#) page.

Tip: You can also [access the Calibration Management Overview page for a hierarchy level](#).

2. Select the **Calibration Events** tab.
The **Calibration Events** section appears, displaying a list of Calibration records.
3. Using the Asset Hierarchy, select the Asset for which you want to create the Calibration Event.
4. Select , and then select one of the Calibration Event family types.

Note: You can select a Calibration Event family type only if you select an Asset in the Asset Hierarchy.

A blank datasheet for the Calibration Event appears.

5. Select the Calibration Strategy based on which the number of Calibration results are generated.
6. Select **Calibration > Calibration Ranges**.
7. Enter values in the remaining [available fields](#), and then select .

The Calibration Event is created.

Create a Calibration Event Using the Calibration Queue Section

About This Task

This topic describes how to create the following Calibration records manually without using a Calibration Template:


- Calibration, Analog
- Calibration, Discrete
- Calibration, Weight Scale
- Calibration, Single-Component Analyzer
- Calibration, Multi-Component Analyzer
- Calibration, Functional Test

This topic describes how to create a Calibration Event from the **Calibration Queue** section. You can also [Create a Calibration Event from the Calibration Events Section](#) on page 66.

Procedure

1. Access the [Calibration Management Overview](#) page.

Tip: You can also [access the Calibration Management Overview](#) page for a hierarchy level.

2. Select the **Calibration Queue** tab.
The **Calibration Queue** section appears, displaying a list of Calibration records.
3. Select the check box corresponding to the Asset for which you want to create the Calibration Event.
Note: The Asset that you select must not be linked to a Calibration Template but must be linked to a Calibration Task.
4. Select **Manual Calibration**, and then select one of the Calibration Event family types.
5. Select **Create**.
A blank datasheet for the Calibration Event appears. The selected Asset and the associated Calibration Task are automatically populated.
6. Select the Calibration Strategy based on which the number of Calibration results are generated.
7. Select **Calibration > Calibration Ranges**.
8. Enter values in the [available fields](#), and then select .
The Calibration Event is created.

Access a Calibration

About This Task

This topic describes how to access the following Calibration records:


- Calibration, Analog
- Calibration, Discrete
- Calibration, Weight Scale
- Calibration, Single Component Analyzer
- Calibration, Multi-component Analyzer
- Calibration, Functional Test
- Calibration, CMX
- Calibration, Summary Event

Procedure


1. Access the [Calibration Management Overview](#) page.

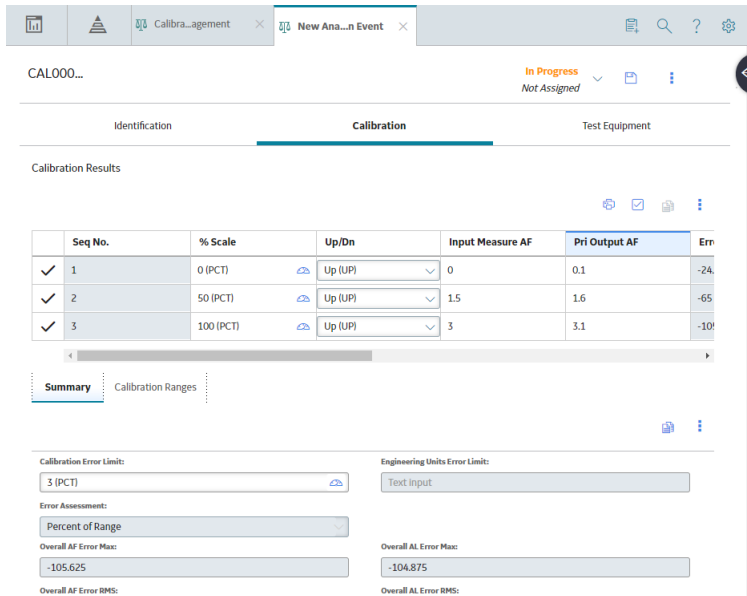
Tip: You can also [access the Calibration Management Overview](#) page for a hierarchy level.

2. Select the **Calibration Events** tab.
The **Calibration Events** section appears, displaying a list of Calibration records.
3. In the **Event ID** column, select the link for the Calibration that you want to access.
The details of the selected Calibration appear on a new page, displaying the **Identification**, **Calibration**, and **Test Equipment** sections. By default, the **Identification** section appears, displaying the datasheet for the selected Calibration.

Note: As needed, you can modify the values in the [available fields](#), and then select  to save your changes.

4. Select the **Calibration** tab.
The **Calibration** section appears, displaying a list of Calibration Results and the summary of the Calibration Event.

Note: The following image is specific to analog calibration. The image and fields differ based on the type of calibration. As needed, you can modify the values in the [available fields](#), and then select  to save your changes.



The screenshot shows a software interface for calibration management. At the top, there are tabs for 'Calibration Management' and 'New Ana...n Event'. Below the tabs, there are sections for 'Identification', 'Calibration', and 'Test Equipment'. The 'Calibration' section is active, displaying a table of 'Calibration Results'.

| Seq No. | % Scale | Up/Dn | Input Measure AF | Pri Output AF | Err |
|---------|-----------|---------|------------------|---------------|------|
| 1 | 0 (PCT) | Up (UP) | 0 | 0.1 | -24. |
| 2 | 50 (PCT) | Up (UP) | 1.5 | 1.6 | -65 |
| 3 | 100 (PCT) | Up (UP) | 3 | 3.1 | -101 |

Below the table, there is a 'Summary' section with 'Calibration Ranges'. It includes fields for 'Calibration Error Limits' (3 (PCT)), 'Engineering Units Error Limits' (Text input), 'Error Assessment' (Percent of Range), 'Overall AF Error Max' (-105.625), and 'Overall AL Error Max' (-104.875).

Access a Calibration Summary Event


About This Task

This topic describes how to access the Calibration, Summary Event record.

Procedure

1. Access the [Calibration Management Overview](#) page.

Tip: You can also [access the Calibration Management Overview](#) page for a hierarchy level.

2. Select  .
The Instrumentation System Overview page appears, displaying a list of Instrumentation System records.
3. Select an existing Instrumentation System record to open it. In the pane, the root node is selected by default.
In the workspace, the Instrumentation System record datasheet appears under DETAILS and a list of summary event records are displayed under SUMMARY EVENT HISTORY.
4. Select the hyperlink for an Instrumentation System Event.
The event record is displayed in a new tab.
5. Select **DETAILS** to view the Instrumentation System Event record; select **CHILD EVENT RESULTS** to view the list of child events.

Results

The Instrumentation System Event displays the parent asset details and the Calibration Task used. It also displays the summary result of the calibration results related to child assets linked to the Instrumentation System.


The Overall PASS/FAIL field shows the summary result of the child events.

- If the Overall PASS/FAIL result of all the child events is PASS, then the Overall PASS/FAIL of the summary result is set to PASS.
- If the Overall PASS/FAIL result of any of the child events is FAIL, then the Overall PASS/FAIL of the summary result is set to FAIL

Access the Recommended Actions Pane

Procedure

1. [Access the Calibration](#) to which you want to access the Recommendation.

2. On the upper-right corner of the page, select . The **Recommended Actions** pane appears, displaying a list of Recommendations linked to the Calibration.

Tip: For information about additional options available when working with the Recommendation records, refer to the Action Management section of the documentation.

Access a Calibration Graph

Before You Begin

- Create a Calibration.


About This Task

The following types of graphs are available in Calibration Management:

- Error Graph
- Measure Graph
- Error Trend
- Pass/Fail Trend

This topic describes how to access these graphs.

Procedure

1. [Access the Calibration](#) for which you want to access the graph.
2. In the upper-right corner of the workspace, select , and then select the type of graph that you want to access.
The graph appears.

Change the State of a Calibration

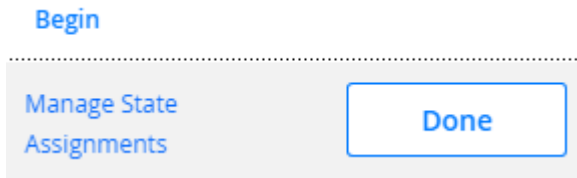
About This Task

This topic describes how to change the state of a Calibration, while assigning each state to a user.

Important: You can approve or reject a calibration only if you are member of the [MI Calibration Administrator Security Group](#).

Procedure

1. [Access the Calibration](#) for which you want to change the state.
The current state of the analysis appears on the upper-right corner of the datasheet.
2. In the upper-right corner of the workspace, select the button that indicates the current state of the calibration. For example, if the current state of the calibration is In Progress, select the **In Progress** button.
A drop-down menu appears, displaying a list of operations that you can perform on the analysis to change its state.




3. Select **Manage State Assignments**.
The **State Assignments** window appears.
4. If not already done, assign the next state of the calibration to the appropriate user, and then select **Done**.
The **State Assignments** window closes.
5. In the upper-right corner of the workspace, select the button that indicates the current state of the calibration. For example, if the current state of the calibration is In Progress, select the **In Progress** button. Then, select the necessary operation that will change the state of the calibration, and then select **Done**. For example, if you want to change the state of the calibration from In Progress to Pending Approval, select **Propose**, and then select **Done**.

Next Steps

- [Propose a recommendation](#) to improve the calibration strategy.

Create a Recommendation

Procedure

1. [Access the Recommended Actions](#) pane.
2. In the upper-left corner of the pane, select **+**.
A blank datasheet of the recommendation appears.
3. As needed, enter values in the [available fields](#), and then in the upper-right corner of the datasheet, select .
The recommendation is created.

Tip: For information about additional options available when working with the Recommendation records, refer to the Action Management section of the documentation.

Generate a Calibration Report

Procedure

1. [Access the Calibration](#) for which you want to generate a report.


- In the upper-right corner of the datasheet, select , and then select **View Report**.

The Calibration report is generated. You can print, save, or export the report or attach the report to an email.

Analog Calibration Template Report

Last Modified On : 5/24/2017 12:17:55 PM Modified By Administrator, Meridium

1 of 1
100%



Analog Field Calibration Report

Calibration Details

Calibration Type: DPI 620

Calibration Template ID: 60F-10V, DPI 620, 2U, bar, - mA

Tag ID: 000000004005007

Tag Description: 60F10V HG GUARD BED FILTER

Manufacturer:

Model Number:

Serial Number:

Physical Location:

Site ID: Roanoke, VA

Calibration Range

Calibration Strategy: **Allowable Error:**

| | LR Value | UR Value | Range UOM |
|------------------------------|----------|----------|-----------|
| Primary Input Range: | 0 | 2 | bar |
| Primary Output Range: | 4 | 20 | mA |
| Custom Input Range: | | | |
| Custom Output Range: | | | |

Delete a Calibration

About This Task

This topic describes how to delete the following Calibration records:


- Calibration, Analog
- Calibration, Discrete
- Calibration, Weight Scale
- Calibration, Single Component Analyzer
- Calibration, Multi-component Analyzer
- Calibration, Functional Test


Procedure

- Access the [Calibration Management Overview](#) page.

Tip: You can also [access the Calibration Management Overview](#) page for a hierarchy level.

- Select the **Calibration Events** tab.
The **Calibration Events** section appears, displaying a list of Calibration records.
- Next to each Calibration that you want to delete, select the check box.

Tip: You can also filter and search for the Calibration Task by selecting  on the upper-right corner of the workspace. The search results appear as you enter values.

4. In the section, select .
The **Delete Calibration Event(s)** dialog box appears, asking you to confirm that you want to delete the selected Event(s) and all the links to other records.
5. Select **OK**.
The Calibration is deleted.

Chapter 10

Admin

Topics:

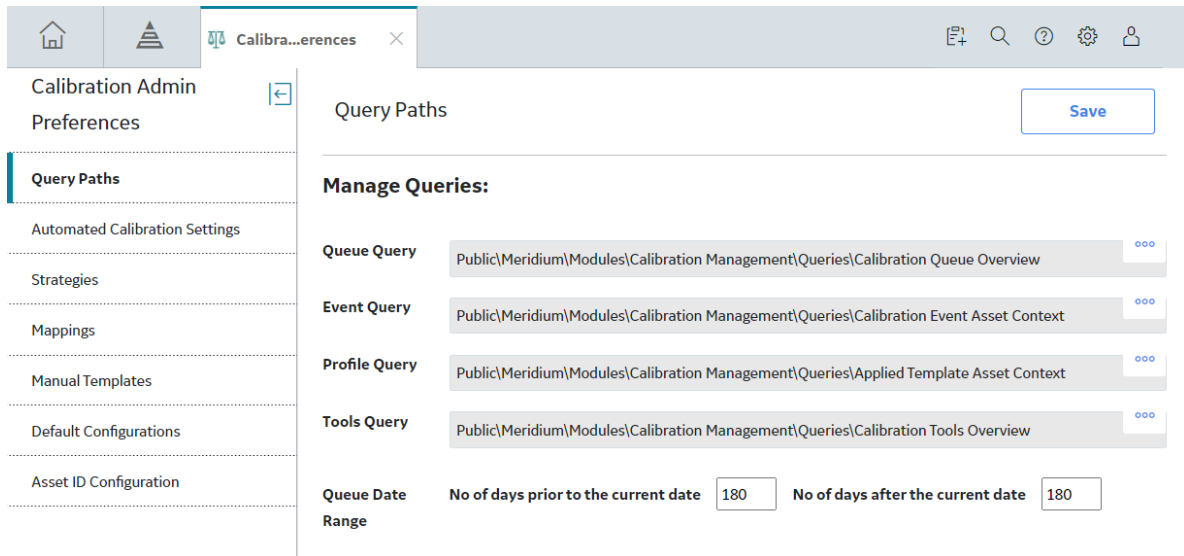
- [Calibration Management Admin Preferences](#)
- [Query Paths](#)
- [Automated Calibration Settings](#)
- [Calibration Strategies](#)
- [Device Mappings](#)
- [Template Defaults](#)
- [Profile Templates](#)
- [Manual Templates](#)
- [Asset ID Configuration](#)

Calibration Management Admin Preferences

Access the Calibration Management Admin Preferences Page

Procedure

In the **Applications** menu, navigate to **ADMIN > Application Settings > Calibration Management**. The **Calibration Admin Preferences** page appears, displaying the **Query Paths** workspace, which contains a list of queries used to populate the [Calibration Management Overview](#) page.



Query Paths

About Query Paths

When you select a tab on the **Calibration Management Overview** page, a query is executed to provide the list of records in the corresponding section. You can, however, modify these query paths to point to different queries.

Specify Different Search Queries

About This Task


On the **Calibration Management Overview** page, when you select the **Calibration Queue**, **Calibration Events**, **Calibration Profiles**, and **Calibration Tools** tabs in the workspace, the following queries are executed:

- **Calibration Queue Overview**: Returns a list of Calibration Queue records. This query is executed when you select **Calibration Queue** on the **Calibration Management Overview** page.
- **Calibration Event Asset Context**: Returns a list of Calibration Events (also called Calibrations). This query is executed when you select **Calibration Events** on the **Calibration Management Overview** page.

- **Applied Template Asset Context:** Returns a list of Calibration Profiles that contains templates that have been applied to the assets. This query is executed when you select **Calibration Profiles** on the **Calibration Management Overview** page.
- **Calibration Tools Overview:** Returns a list of Calibration Tools. This query is executed when you select **Calibration Tools** on the **Calibration Management Overview** page.

This topic describes how to specify different search queries for Calibration Management, replacing the default ones.

Procedure

1. Access the [Calibration Admin Preferences](#) page.
2. In the Query Paths workspace, next to the query that you want to replace, select . The **Select a query from the catalog** window appears.
3. Navigate to the folder that contains the query that you want to specify.
4. Select the query that you want to specify, and then select **Open**. In the box corresponding to the query that you want to replace, the path to the selected query appears.
5. Repeat steps 3 - 5 for all the other queries that you want to replace.
6. In the upper-right corner of the **Query Paths** workspace, select **Save**. The default queries are replaced by the queries you selected.

Results

- On the **Calibration Management Overview** page, when you select the tabs in the workspace, the queries that you have specified are executed.

Set the Default Date Range for Calibration Queue


About This Task

This topic describes how to set the default date for the filter in the **Calibration Queue** section.

Procedure

1. Access the [Calibration Admin Preferences](#) page.
2. In the Query Paths workspace, enter values in the No of days prior to the current date and the No of days after the current date fields.

By default, these fields are set to 180.
3. In the upper-right corner of the **Query Paths** workspace, select **Save**.

The tasks in the **Calibration Queue** section are filtered based on the date range that you have specified. You can [set a different date range](#) by selecting the  icon in the upper-left corner of the **Calibration Management Overview** page.

Automated Calibration Settings

General Settings

The general settings are used to control the Automated Calibration workflows and user experience. These settings are applicable to all calibrator types.

Show Certified Calibrators Only: This setting is used to filter calibrators by their certification status. By default, this check box is not selected. Select this check box and then select **Save** to display only the certified calibrators on the **Send for Calibration** page.

Automated Calibration Settings

The Automated Calibration Settings are used to control the Automated Calibration workflows and user experience. This section contains the settings for the following Calibrator types:

- [Fluke Settings](#)
- [CMX Settings](#)

Fluke Settings

Enable Fluke Tasks Management: This setting is used to activate or deactivate the functionality of the enhanced Automated Calibration workflow for the following Calibrator devices:

- Fluke 74x – 75x
- Fluke 729 FC

By default, this check box is not selected. To use the enhanced workflow, select this check box and then select **Save**.

CMX Settings

Calibration data is transferred between GE Digital APM and CMX Calibration Management Software using XML file formats. There are two ways of sending and receiving calibration data to the CMX software.

- **File Polling:** You can specify the folder paths that would contain the XML files that are sent and received. When you send data to CMX calibrator, the following two XML files are created:
 - **Equipment Data XML File:** Contains the details of the Asset that is calibrated. This file is saved in the folder path specified in the Equipment Import Directory field in the **CMX Settings** section.
 - **Work Order XML File:** Contains the details of the Calibration Task and Calibration Template. This file is saved in the folder path specified in the Work Order Import Directory field in the **CMX Settings** section.

These folders are regularly monitored by the Beamex Business Bridge (B3) software and whenever a new XML file is saved in these folders, a corresponding work order is created in the CMX software. Based on whether the calibration data was sent to CMX software successfully or not, the XML files for Equipment data and Work Order data are moved to a subfolder, `\Done` or `\Error`, within the import folder paths specified in CMX settings.

After the calibration is performed, the CMX software saves an XML file containing calibration data, in the folder path specified in the Work Order Export Directory field in the **CMX Settings** section. When you receive calibration data from CMX Software, the Meridium Device Service utility picks up the work orders from this folder and transfers them to GE Digital APM. In GE Digital APM you can select the work orders that you want to save. Based on whether the Calibration Events for the selected work orders was successfully created or not, the Meridium Device Service will move the work order XML file to the subfolder, `\Done` or `\Error`, within the export folder path specified in CMX settings .

- **Web Services:** You can specify a web service address for communicating with the CMX software via Beamex Business Bridge (B3) software. GE Digital APM uses the address specified in the Import Address field for sending Equipment Data XML file and Work Order XML file to the CMX software. Similarly, CMX software uses the address specified in the Export Address field for sending XML file containing the calibrated data to GE Digital APM.

Configure CMX Settings

About This Task

This topic describes how to configure file sharing settings for performing automated calibration using CMX software.

Procedure

1. Access the [Calibration Admin Preferences](#) page.
2. In the pane, select the **CMX Settings** tab.
The **CMX Settings** workspace appears, displaying a list of folder path settings for the CMX software.
3. In the **File Poller** section, set the following folder paths that are used to perform calibration using CMX software:

Note: The fields in the **File Poller** subsection are required fields.

Important: The folder paths that you specify in the **File Poller** subsection must be the same folder paths that is set in the Data Transfer settings in the Beamex Business Bridge services.

- **Equipment Import Directory:** Enter the folder path where you want the Equipment data .XML file to be saved when you send calibration data from GE Digital APM to CMX software. This .XML file contains data about the Asset to be calibrated.
 - **Work Order Import Directory:** Enter the folder path where you want the work order .XML file to be saved when you send calibration data from GE Digital APM to CMX software. This .XML file contains the work order details for the calibration.
 - **Work Order Export Directory:** Enter the folder path where you want the completed work order .XML file to be saved when you receive calibration data from CMX software.
4. In the **Web Services** section, set the following web service addresses that can be used to perform calibration using CMX software:

Important: The URLs that you specify in the **Web Services** subsection must be the same URLs that is set in the Data Transfer settings in the Beamex Business Bridge services.

- **Import Address:** Enter the Web Services address that the CMX software will use to receive XML files for calibration.
 - **Export Address:** Enter the Web Services address that the CMX software will use to send the XML files after calibration.
5. In the **CMX Settings** workspace, select **Save**.
The CMX settings are configured.


Default Configurations

About This Task

The **Default Configurations** workspace allows you to set the default values in certain [Calibration Template](#) family fields in [Calibration Management](#).

Procedure

1. Access the [Calibration Admin Preferences](#) page.
2. In the pane, select **Default Configurations**.
The **Default Configurations** workspace appears, displaying the Template Setup Defaults datasheet.

Note: As needed, you can modify the values in the [required fields](#), and then select  to save your changes. A value that has been modified in this section will be reflected in the respective [Calibration Template](#) datasheet.

Calibration Strategies


About Calibration Strategies

A Calibration Strategy is used to define the strategy that you want to use in a calibration.

Access a Calibration Strategy



Procedure

1. Access the [Calibration Admin Preferences](#) page.
2. In the pane, select **Strategies**.
The **Strategies** workspace appears, displaying a list of available calibration strategy records.
3. In the **Strategy ID** column, select the link for the calibration strategy that you want to access.
The datasheet for the selected calibration strategy appears.

Note: As needed, you can modify the values in the [available fields](#), and then select  to save your changes.

Create a Calibration Strategy

Procedure

1. Access the [Calibration Admin Preferences](#) page.
2. In the pane, select **Strategies**.
The **Strategies** workspace appears, displaying a list of available calibration strategy records.
3. In the workspace, select .
A blank datasheet for the new strategy appears.
4. As needed, enter values in the [available fields](#).
5. In the workspace, select .
The Calibration Strategy is created.

Delete a Calibration Strategy


About This Task

You cannot delete a Calibration Strategy that is used in a Calibration Mapping, Calibration Profile, Calibration Template, or a Calibration Event.

Procedure

1. Access the [Calibration Admin Preferences](#) page.
2. In the pane, select **Strategies**.
The **Strategies** workspace appears, displaying a list of available calibration strategy records.
3. In the row for each calibration strategy that you want to delete, select the check box.

In the workspace, the  button is enabled.

4. Select .
The **Delete Strategies** dialog box appears, asking you to confirm that you want to delete each selected strategy.
5. Select **Yes**.
The selected calibration strategy is deleted.

Device Mappings

About Device Mappings


Device Mappings are used to map fields between GE Digital APM and the calibrator that you want to use for automated calibration.

Note: Both Fluke 754 and Fluke 729 calibrators use common field mappings. Any modifications in the field mappings affect Send and Receive operations on both the devices.

Access a Device Mapping



Procedure

1. Access the [Calibration Admin Preferences](#) page.
2. In the pane, select **Mappings**.
The **Mappings** workspace appears, displaying a list of supported drivers.
3. In the **Supported Driver** column, select the link for the supported driver that you want to access.
The **Mappings** workspace for the selected device appears, displaying a list of device mappings.
4. In the **Mapping ID** column, select the link for the device mapping that you want to access.
The datasheet for the device mapping appears.

Note: As needed, you can modify the values in the [available fields](#), and then select  to save your changes.

Create a Device Mapping

Procedure

1. Access the [Calibration Admin Preferences](#) page.
2. In the pane, select **Mappings**.
The **Mappings** workspace appears, displaying a list of supported drivers.
3. In the **Supported Driver** column, select the link for the supported driver that you want to access.
The **Mappings** workspace for the selected device appears, displaying a list of device mappings.
4. In the workspace, select .
A blank datasheet for the new device mapping appears.
5. As needed, enter values in the [available fields](#).
6. In the section, select .
The device mapping is created.

Map a Family to a Device Mapping

Before You Begin

- [Create a Device Mapping](#)

Procedure

1. [Access the Device Mapping](#) for the required device.
2. In the **Mappings** workspace, select the **Families** tab.
The **Families** section appears, displaying a list of APM Families that have been mapped to the device mapping.
3. In the **Select APM Family** box, select the family.
4. Select **Save**.
The family is mapped to the device mapping.

Map a Field to a Device Mapping

Before You Begin

- [Create a Device Mapping](#)

Procedure

1. [Access the Device Mapping](#) for the required device.
2. In the **Mappings** workspace, select the **Fields** tab.
The **Fields** section appears.
3. In the **Select APM Family** box, select the family.
Note: The **Select APM Family** box will only contain families that have been mapped to the selected device mapping.
4. In the **Select APM Field** box, select the field.
Note: The **Select APM Field** box will only contain fields of the family that was selected from the **Select APM Family** box.
5. In the **Select Calibrator Field** box, select the calibrator field.
6. As needed, select or clear the following check boxes:
 - **Is Key:** Clear this check box.
 - **Is Strategy Dependent:** Select this check box if you want the field to be dependent on the Calibration Strategy field in the Calibration Profile datasheet when you [create a Calibration Profile](#).
7. Select **Save**.
The field is mapped to the device mapping.

Map a Strategy to a Device Mapping

Before You Begin

- [Create a Device Mapping](#)

Procedure

1. [Access the Device Mapping](#) for the required device.

2. In the **Mappings** workspace, select the **Applicable Strategies** tab.
The **Applicable Strategies** section appears, displaying a list of strategies that have been mapped to the selected device.

Note: The **Select Strategy** box will only contain those strategies that are of the same template type as the selected device mapping.

3. In the **Select Strategy** box, select the strategy.
4. Select **Save**.
The strategy is mapped to the device mapping.


Delete a Device Mapping

Procedure

1. Access the [Calibration Admin Preferences](#) page.
2. In the pane, select **Mappings**.
The **Mappings** workspace appears, displaying a list of supported drivers.
3. In the **Supported Driver** column, select the link for the supported driver that you want to access.
The **Mappings** workspace for the selected device appears, displaying a list of device mappings.
4. In the row for each device mapping that you want to delete, select the check box.

Note: You cannot delete a mapping that is used in a Profile Template or a Template Default.

In the workspace, the  button is enabled.

5. Select .
- The **Delete Mappings** dialog box appears, asking you to confirm that you want to delete the selected device mapping.
6. Select **Yes**.
The selected device mapping is deleted.

Template Defaults

About Template Defaults

Template Default records are used to define the default field values that are used to populate in Calibration Templates.

Access a Template Default

About This Task


Note: If the supported driver is CMX, this tab does not appear.

Procedure

1. Access the [Calibration Admin Preferences](#) page.
2. In the pane, select **Mappings**.
The **Mappings** workspace appears, displaying a list of supported drivers.
3. In the **Supported Driver** column, select the link for the supported driver that you want to access.
The **Mappings** workspace for the selected device appears, displaying a list of device mappings.
4. Select the **Template Defaults** tab.

The **Template Defaults** section appears, displaying the list of template defaults that have been added to the supported driver.

5. In the **Template Defaults ID** column, select the link for the Template Default that you want to access. The datasheet for the selected Template Default appears.



Note: As needed, you can modify the values in the [available fields](#), and then select  to save your changes.

Create a Template Default

About This Task

Note: If the supported driver is CMX, this tab does not appear.

Procedure



1. Access the [Calibration Admin Preferences](#) page.
2. In the pane, select **Mappings**.
The **Mappings** workspace appears, displaying a list of supported drivers.
3. In the **Supported Driver** column, select the link for the supported driver that you want to access. The **Mappings** workspace for the selected device appears, displaying a list of device mappings.
4. Select the **Template Defaults** tab.
The **Template Defaults** section appears, displaying the list of template defaults that have been added to the supported driver.
5. In the workspace, select .
A blank datasheet for the new Template Default appears.
6. As needed, enter values in the [available fields](#).
7. In the workspace, select .
The Template Default is created.

Delete a Template Default

About This Task

Note: If the supported driver is CMX, this tab does not appear.

Procedure

1. Access the [Calibration Admin Preferences](#) page.
2. In the pane, select **Mappings**.
The **Mappings** workspace appears, displaying a list of supported drivers.
3. In the **Supported Driver** column, select the link for the supported driver that you want to access. The **Mappings** workspace for the selected device appears, displaying a list of device mappings.
4. Select the **Template Defaults** tab.
The **Template Defaults** section appears, displaying the list of template defaults that have been added to the supported driver.
5. In the row for each Template Default that you want to delete, select the check box.
In the workspace, the  button is enabled.
6. Select .

The **Delete Template Defaults** dialog box appears, asking you to confirm that you want to delete each selected Template Default.

7. Select **Yes**.
The selected Template Default is deleted.

Profile Templates

About Profile Templates

Profile Templates are used to create master templates that you can use in calibration.



Access a Profile Template

Procedure

1. Access the [Calibration Admin Preferences](#) page.
2. In the pane, select **Mappings**.
The **Mappings** workspace appears, displaying a list of supported drivers.
3. In the **Supported Driver** column, select the link for the supported driver that you want to access.
The **Mappings** workspace for the selected device appears, displaying a list of device mappings.
4. Select the **Profile Templates** tab.
The **Profile Templates** section appears, displaying the list of Profile Templates that have been added to the supported driver.
5. In the **Template ID** column, select the link for the Profile Template that you want to access.
The selected Profile Template datasheet appears on a new page, displaying the **Calibration Strategy Details** and **Equipment Details** sections. By default, the **Calibration Strategy Details** section appears.

Create a Profile Template

Procedure

1. Access the [Calibration Admin Preferences](#) page.
2. In the pane, select **Mappings**.
The **Mappings** workspace appears, displaying a list of supported drivers.
3. In the **Supported Driver** column, select the link for the supported driver that you want to access.
The **Mappings** workspace for the selected device appears, displaying a list of device mappings.
4. Select the **Profile Templates** tab.
The **Profile Templates** section appears, displaying the list of Profile Templates that have been added to the supported driver.
5. In the section, select , and then select the type of Profile Template that you want to create.
A blank datasheet for the new Profile Template appears on the Profile Template page.
6. As needed, enter values in the [available fields based on the type of Profile Template that you selected](#).
7. In the page, select .
The Profile Template is created.

Note:

- Both Fluke 754 and Fluke 729 calibrators use Calibration Type with value Fluke 74x in Calibration Template and Calibration Event records.

- Both Fluke 754 and Fluke 729 calibrators use the same set of Input Type and Output Type System Codes from MI_CALIBRATION_IO_TYPES System Code Table. Ensure that you select compatible Modes and Input/Output Types while creating calibration templates for Fluke 754 or Fluke 729.

Edit a Profile Template

Procedure

1. Access the [Calibration Admin Preferences](#) page.
2. In the pane, select **Mappings**.
The **Mappings** workspace appears, displaying a list of supported drivers.
3. In the **SUPPORTED DRIVER** column, select the link for the supported driver that you want to access.
The **Mappings** workspace for the selected device appears, displaying a list of device mappings.
4. Select the **Profile Templates** tab.
The **Profile Templates** section appears, displaying the list of Profile Templates that have been added to the supported driver.
5. In the **TEMPLATE ID** column, select the link for the Profile Template that you want to edit.

Note: If you want to edit a Manual Template, navigate to the **Manual Templates** section in the **Calibration Admin Preferences** page, and then select link in the **TEMPLATE ID** column that you want to edit.

The selected Profile Template datasheet appears on a new page, displaying the **Calibration Strategy Details** and **Equipment Details** sections. By default, the **Calibration Strategy Details** section appears.

6. As needed, modify the values in the [available fields](#).

7. Select .

- If the Profile Template is not linked to a Profile, the changes are saved.
- If the Profile Template is linked to a Profile, the **Update Profiles Using this Template** window appears, displaying the following information:
 - **PROFILE ID:** Displays the Calibration Profiles that are using this Profile Template.
 - **EQUIPMENT PROFILE:** Displays the Equipment Profiles that are linked to each asset.
 - **CUSTOMIZED:** Indicates if the Equipment Profiles are customized.

By default, all the records are selected.

- If you select the **Update Strategy Details from Profile Template** check box, the Strategy details of the selected applied Profiles are updated to match the Strategy details specified in the updated Profile Template.
- If you select the **Update Equipment Details from Profile Template** check box, the Equipment details of the selected applied Profiles are updated to match the Equipment details specified in the updated Profile Template.
- If you add detail records to the Functional Test Template, and you select the **Append newly added detail records from Profile Template** check box, the detail records that are newly added to the Profile Template will be appended to selected applied Profiles.
- If you update the detail records for the Functional Test Template, and you select **Update existing detail records from Profile Template** check box, the existing detail records associated with the selected applied Profiles will be updated to match the detail records of the Profile Template.
- If you do not want to update all the applied Profiles, clear the check box that corresponds to each applied Profile that you want to exclude. For example, you may want to exclude the applied Profiles that are already customized.

Note: For the applied Profiles that are not selected, the **Customized** field is set to true if the values for the applied Profile are different than the values for the Profile Template.

- Select **Update and Save**.
The selected records are updated.


Delete a Profile Template

Procedure

1. Access the [Calibration Admin Preferences](#) page.
2. In the pane, select **Mappings**.
The **Mappings** workspace appears, displaying a list of supported drivers.
3. In the **Supported Driver** column, select the link for the supported driver that you want to access.
The **Mappings** workspace for the selected device appears, displaying a list of device mappings.
4. Select the **Profile Templates** tab.
The **Profile Templates** section appears, displaying the list of Profile Templates that have been added to the supported driver.
5. In the row for each Profile Template that you want to delete, select the check box.

Note: You cannot delete a Profile Template that is associated with a Calibration Profile.

In the workspace, the  button is enabled.

6. Select .
- The **Delete Calibration Template(s)** dialog box appears, asking you to confirm that you want to delete the selected Profile Templates.
7. Select **Yes**.
The selected Profile Template is deleted.

Manual Templates


About Manual Templates

Manual Templates are used to define default values that should appear in a Calibration Template when you perform a manual calibration.

Access a Manual Template

Procedure

1. Access the [Calibration Admin Preferences](#) page.
2. In the pane, select **Manual Templates**.
The **Manual Templates** workspace appears, displaying a list of available manual templates.
3. In the **Template ID** column, select the link for the manual template that you want to access.
The selected manual template datasheet appears on a new page, displaying the **Calibration Strategy Details** and **Equipment Details** sections. By default, the **Calibration Strategy Details** section appears.


Note: As needed, you can modify the values in the [available fields](#), and then select .

- If the manual template is not linked to a profile, the changes are saved. For more information, refer to the Manage Calibration Profiles section of the documentation.


- If the manual template is linked to a Profile, the **Update Profiles Using this Template** window appears, displaying a list of Asset in the Profile. To update the input and output ranges:
 - a. Select the check box that corresponds to each asset for which you want to update the input and output ranges with those of the manual template.
 - b. Select **Update and Save**.
The copies of the templates that are linked to the selected Assets are updated with the modified details of the manual template.

Create a Manual Template

Procedure

1. Access the [Calibration Admin Preferences](#) page.
2. In the pane, select **Manual Templates**.
The **Manual Templates** workspace appears, displaying a list of available manual templates.
3. In the workspace, select , and then select the type of manual template that you want to create.
4. Depending on the type of manual template that you selected, enter values in the available fields for the following records:
 - [Analog Calibration](#)
 - [Discrete Calibration](#)
 - [Functional Test](#)
 - [Multi-Component Analyzer](#)
 - [Single Component Analyzer](#)



Important: In the **Calibration Strategy Details** section, the **Detail** subsection must contain at least one [Single Component Analyzer Details](#) record.

 - [Weight Scale Calibration](#)
5. On the page, selects .
The manual template is created.

Delete a Manual Template

Procedure

1. Access the [Calibration Admin Preferences](#) page.
2. In the pane, select **Manual Templates**.
The **Manual Templates** workspace appears, displaying a list of available manual templates.
3. In the row for each manual template that you want to delete, select the check box.
Note: You cannot delete a manual template that is associated with a Calibration Profile.

In the workspace, the  button is enabled.
4. Select .
The **Delete Calibration Template(s)** dialog box appears, asking you to confirm that you want to delete each selected manual template.
5. Select **Yes**.
The selected manual template is deleted.

Asset ID Configuration

About Calibration Asset Configuration

The Asset ID Configuration feature is used to configure the different asset families that can be used in the Calibration Management module. You can map any of the Equipment, Functional Location, or custom asset family fields as an asset ID, which is used to construct the applied template ID and in the data loader to find the asset. Equipment and Functional Location are configured as part of the baseline product; however, you can add a Calibration Asset Configuration record for the custom asset in the database.


To add a Calibration Asset Configuration record for the custom asset family, follow these steps:

1. [Create a query for an asset family.](#)
2. [Create a Calibration Asset Configuration record.](#)
3. [Include the custom asset details in the applied template ID.](#)
4. [Create a Device Mapping record](#) for automated calibration.

Access a Calibration Asset Configuration Record

Procedure

1. [Access the Calibration Admin Preferences page.](#)
2. In the pane, select **Asset ID Configuration**.
The **Asset ID Configuration** workspace appears, displaying a list of Calibration Asset Configuration records.
3. In the **Asset Family** column, select the link for the asset family that you want to access.
The datasheet for the selected asset family appears.

Note: As needed, you can modify the values in the [available fields](#), and then select  to save your changes.

Create a Query for an Asset family

About This Task

This topic describes how to create a query to map the fields of a custom asset family with the applied template family fields.

Tip: For more information, refer to the Queries section of the documentation.

Procedure

1. In the **Applications** menu, navigate to the **TOOLS** section, and then select **Queries**.
The **Query** page appears, displaying a list of queries.
2. In the page, select **Create New**.
The **Design** workspace appears.
3. In the **Select a Family or Query** window, in the **Families** section, in the drop-down list box, select an entity family (for example, Piping Line).
4. Select **Add**.
The **Select a Family or Query** window closes, and the selected query source appears as a node on the design canvas.

5. In the page heading, select **SQL**, and then, in the **SQL** workspace, enter the SQL code.
6. In the **SQL** workspace, select **Save**.
The **Save As** window appears.
7. In the folder hierarchy, navigate to the `Public\Meridium\Modules\Calibration Management\Queries` folder.
8. Enter values in the **Name** and **Description** box.
The **Caption** box is populated automatically with the value that you entered in the **Name** box, and the **Of type** box is populated automatically with the catalog item type.
9. Select **Save**.
The query is created.

Example

Example: The Piping Line query is added as follows:

```
SELECT [Piping Line].ENTY_KEY "MI_TMCA0000_ASSET_KEY_N"
, Calibration_Asset_ID_Query."Asset ID"
"MI_TMCA0000_TAG_NAME_C"
, [Piping Line].[ASSET_DESC_CHR]
"MI_TMCA0000_TAG_DESCR_C"
, [Piping Line].[ASSET_MANUF_CHR] "MI_TMCA0000_MFR_C"
, [Piping Line].[ASSET_MODL_CHR] "MI_TMCA0000_MOD_NO_C"
, [Piping Line].[ASSET_SER_CHR] "MI_TMCA0000_SN_C"
FROM [Piping Line]
JOIN (! 'Public\Meridium\Modules\Calibration Management
\Queries\Calibration Asset ID Query' )
Calibration_Asset_ID_Query ON [Piping Line].ENTY_KEY =
Calibration_Asset_ID_Query."ENTY_KEY"
WHERE [Piping Line].ENTY_KEY IN ((? :n :id=Asset_Key))
```

Next Steps

- [Create a Calibration Asset Configuration record.](#)

Include the Custom Asset Details in the Applied Template ID

Before You Begin

- [Create a Calibration Asset Configuration record.](#)

About This Task

This topic describes how to add a new asset family to the existing Calibration Asset ID Query located in the `Public\Meridium\Modules\Calibration Management\Queries\Calibration Asset ID Query` folder. It is used to combine the Equipment, Functional Location, and the custom assets to display the fields in the **Linked Asset** subsection in the **Calibration Profile** section.

This query contains the asset families and their fields from the configuration.

Procedure

1. In the **Applications** menu, navigate to the **TOOLS** section, and then select **Queries**.
The **Query** page appears, displaying a list of queries.
2. In the page, select **Browse**.
The **Select a query from the catalog** window appears.

3. Navigate to the Public\Meridium\Modules\Calibration Management\Queries \Calibration Asset ID Query folder, and then select **Open**.
The **Results** workspace appears.
4. In the page heading, select **SQL**, and then, in the **SQL** workspace, modify the SQL code.
5. In the **SQL** workspace, select **Save**.
The custom asset is added to the query.

Example

Example: In the Calibration Asset ID Query, Equipment and Functional Location families are available by default. If you want to create an asset with the Piping Line family, modify the query by adding the highlighted lines of code:

```
SELECT [MI_EQUIP000].[MI_EQUIP000_EQUIP_Tech_Nbr_C]
"Asset ID"
, [MI_EQUIP000].[MI_EQUIP000_Obj_Typ_C] "Type"
, [MI_EQUIP000].ENTY_KEY "ENTY_KEY"
FROM [MI_EQUIP000]
UNION
SELECT [MI_FNCLOC00].[MI_FNCLOC00_FNC_LOC_C] "Asset ID"
, [MI_FNCLOC00].[MI_FNCLOC00_Obj_Typ_C] "Type"
, [MI_FNCLOC00].ENTY_KEY "ENTY_KEY"
FROM [MI_FNCLOC00]
UNION
SELECT [Piping Line].[ASSET_ID_CHR] "Asset ID"
, [Piping Line].[ASSET_TYPE_CHR] "Type"
, [Piping Line].ENTY_KEY "ENTY_KEY"
FROM [Piping Line]
```

Similarly, you can add more custom families to the query using the same field names.

Next Steps

- If you want to perform an automated calibration, [create a Device Mapping record](#).

Create a Calibration Asset Configuration Record

Before You Begin


- [Create a query for an asset family](#).


About This Task

This topic describes how to create a Calibration Asset Configuration record.

Note: You cannot create multiple asset configuration records for the same Asset family. You must delete any previously existing Asset Configuration records for an Asset family to create a new record.

Procedure

1. Access the [Calibration Admin Preferences](#) page.
2. In the pane, select **Asset ID Configuration**.
The **Asset ID Configuration** workspace appears, displaying a list of Calibration Asset Configuration records.
3. In the workspace, select .
A blank datasheet of the Asset ID Configuration appears.

4. As needed, enter values in the [available fields](#).
5. In the workspace, select .
The Calibration Asset Configuration record is created.

Next Steps



- [Include the custom asset details in the applied template ID.](#)

Delete a Calibration Asset Configuration Record

About This Task

You cannot create multiple Calibration Asset Configuration records for the same asset family. You must delete any existing Calibration Asset Configuration records for an Asset family to create a new record.

Procedure

1. [Access the Calibration Admin Preferences page.](#)
2. In the pane, select **Asset ID Configuration**.
The **Asset ID Configuration** workspace appears, displaying a list of available Calibration Asset Configuration records.
3. Next to each Calibration Asset Configuration record that you want to delete, select the check box.
In the workspace, the  button is enabled.
4. Select .
The **Delete Asset Configuration** dialog box appears, asking you to confirm that you want to delete the selected Calibration Asset Configuration record.
5. Select **Yes**.
The selected Calibration Asset Configuration record is deleted.

Chapter 11

Data Loader

Topics:

- [About the Calibration Data Loader](#)
- [About the Calibration Data Loader Requirements](#)
- [About the Calibration Data Loader Data Model](#)
- [About the Calibration Data Loader General Loading Strategy](#)
- [About the Calibration Data Loader Workbook Layout and Use](#)
- [About the Calibration Data Loader Load Verification](#)

About the Calibration Data Loader

Using the Calibration Data Loader, you can implement Calibration Management when you have calibration data in a legacy system, which is not supported by GE Digital APM. To import data using the Calibration Data Loader, GE Digital APM provides an Excel template, `Calibration_DataLoader.xlsx`, which supports baseline Calibration Management in GE Digital APM. You must export your legacy system so that the data can be used to populate the template. The data from the template will then be imported into GE Digital APM using the Calibration Data Loader.

Note: The Excel template is referred to throughout this documentation as the data loader workbook.

The data loader workbook can be used in the following scenarios:

- Loading existing legacy calibration data into GE Digital APM so that you can retain visibility into previous calibration results, compare the results with current and future results, and generate graphs and reports.
- Loading calibration data from a documenting process calibrator that is not supported by GE Digital APM.

After importing the data, the Calibration Data Loader creates the following records in GE Digital APM:

- Test Equipment
- Test Equipment Detail
- Standard Gas Cylinder
- Standard Gas Components
- Calibration Profile
- Calibration Template, Analog
- Calibration Template, Discrete
- Calibration Template, Single Component Analyzer
- Calibration Template, Multi-Component Analyzer
- Calibration Template Detail, Analyzer
- Calibration Task
- Calibration, Analog
- Calibration, Discrete
- Calibration, Single Component Analyzer
- Calibration, Multi-Component Analyzer
- Calibration Result
- Calibration Recommendation

About the Calibration Data Loader Requirements

Before importing data using the data loader workbook, you must have completed the following steps:

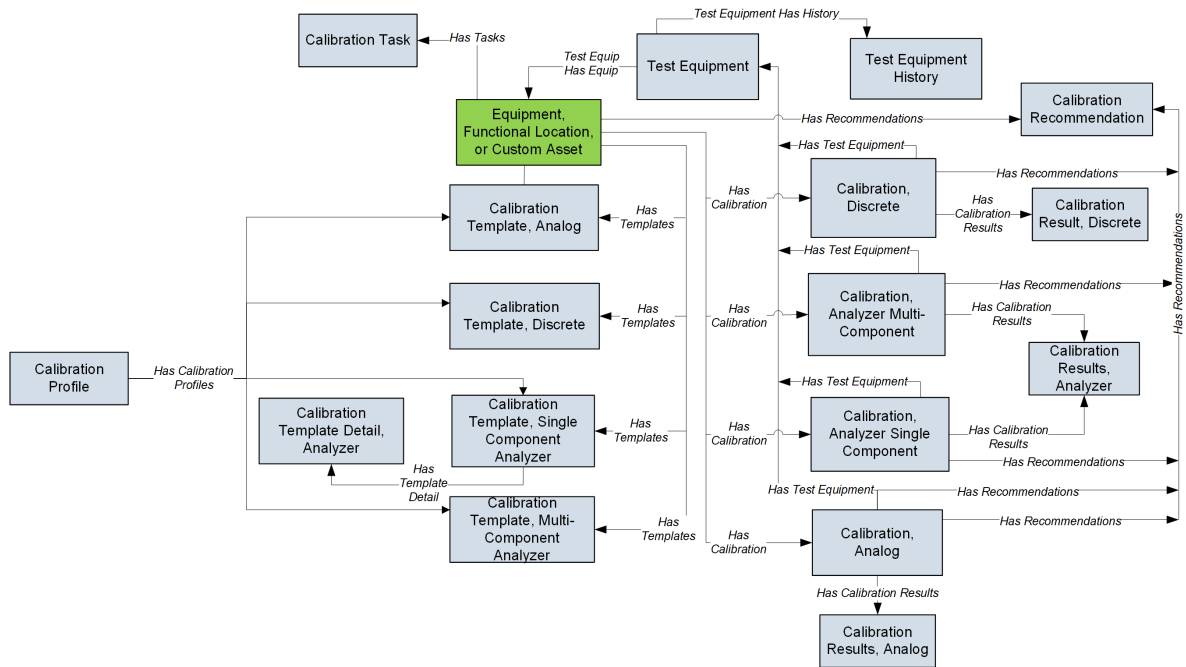
- Deploy the Calibration Management module.
- Populate the Equipment, Functional Location, or custom asset to establish relationship with the families in Calibration Management.
- Enter a valid Asset ID into the data loader workbook. To do this, the Equipment, Functional Location, or custom asset must exist in the GE Digital APM database.
- By default, the Standard Gas Cylinder family is not linked to any other family (except Standard Gas Component) used in Calibration Management. If you want to create Standard Gas Cylinder and Standard Gas Component records using the Data Loader, and link them to Equipment, Functional

Location, or custom asset, then you must define the relationship using the Has Standard Gas relationship family by creating the following relationship definition:

- **Predecessor:** Equipment, Functional Location, or custom asset
- **Predecessor Cardinality:** Zero or many
- **Successor:** Standard Gas Cylinder
- **Successor Cardinality:** Zero or Many
- The Security User performing the data load operation must be associated with either the MI Data Loader User or MI Data Loader Admin Security Role.

About the Calibration Data Loader Data Model

The Calibration Data Loader does not load the entire data model illustrated in the normal help documentation. The following data model illustrates the records that the Data Loader supports. Equipment, Functional Location, or custom asset records, illustrated in green, must exist prior to importing data.



Note: In the diagram, boxes represent entity families and arrows represent relationship families that are configured in the baseline database. You can determine the direction of each relationship definition from the direction of the arrow head: the box from which the arrow originates is the predecessor, and the box to which the arrow head points is the successor.

About the Calibration Data Loader General Loading Strategy

The imported data must load in a specific sequence in order to successfully populate fields, to create records, and to link them to the predecessor and/or successor records.

Best Practices

When importing data using the data loader workbook, you must use the following best practices:

- ID fields (Row 2 of each worksheet) must not include special characters (other than underscores) or spaces.
- Columns (including columns representing custom fields) in the worksheets should be formatted as Text.
- You should not try to create and update a component in the same data loader workbook.
- You must consider the rules described in the [Workbook Layout and Use](#) section of this document while using the Calibration Data Loader.

Load Sequence

The data load is performed in the following sequence:

1. The Batch worksheet is processed. All the records that contain the same batch number are uploaded together.
2. The Test Equipment worksheet is processed. The Data Loader searches for the record that you have specified in the Equipment ID column. If the record exists, it is updated. Otherwise, a Test Equipment is created.
3. The Test Equipment History worksheet is processed. If a Test Equipment History record exists for the Test Equipment specified in the Parent ID column, it is deleted, and a new Test Equipment History record is created based on the details you provide in this worksheet.
4. The Standard Gas Cylinder worksheet is processed. The Data Loader searches for the record that you have specified in the Standard Gas Cylinder ID column. If the record exists, it is updated. Otherwise, a Standard Gas Cylinder is created.
5. The Standard Gas Component worksheet is processed. If a Standard Gas Component record exists for the Standard Gas Cylinder specified in the Parent Key column, it is deleted, and a new Standard Gas Component record is created based on the details you provide in this worksheet.
6. The Profile Template worksheet is processed. The Data Loader searches for the record that you have specified in the Template ID column. If the record exists, it is updated. Otherwise, depending on the value in the Calibration Type column, one of the following records is created:
 - Calibration Template, Analog
 - Calibration Template, Discrete
 - Calibration Template, Single Component Analyzer
 - Calibration Template, Multi-Component Analyzer
7. The Calibration Profile worksheet is processed. The Data Loader searches for the record that you have specified in the Profile ID column. If the record exists, it is updated. Otherwise, a Calibration Profile is created and linked to the template that you have specified in the Profile Template column.
8. The Analog Template, Discrete Template, Single Component Template, and Multi Component Template worksheets are processed. The Data Loader searches for the records that you have specified in the Template ID column. If the records exist, they are updated. Otherwise, the following records are created:
 - Calibration Template, Analog
 - Calibration Template, Discrete
 - Calibration Template, Single Component Analyzer
 - Calibration Template, Multi-Component Analyzer

These records are linked to the profile and Equipment, Functional Location, or custom asset you have specified in the Profile ID and Asset ID columns respectively.
9. The Single Comp Temp Detail worksheet is processed. If a Calibration Template Detail, Analyzer record exists for the template specified in the Template Parent ID column, it is updated. Otherwise, it is created and linked to the Calibration Template, Single Component Analyzer record that you have specified in the Template Parent ID column.

10. The Calibration Task worksheet is processed. The Data Loader searches for the record that you have specified in the Task ID column. If the record exists, it is updated. Otherwise, a Calibration Task is created and linked to the Equipment, Functional Location, or custom asset that you have specified in the Asset ID column and the Calibration Template that you have specified in the Calibration Template ID column.
11. The Calibration Event worksheet is processed. The Data Loader searches for the record that you have specified in the Event ID column. If the record exists, it is updated. Otherwise, one of the following records is created for each row:
 - Calibration, Analog
 - Calibration, Discrete
 - Calibration, Single Component Analyzer
 - Calibration, Multi-Component Analyzer

The record is linked to the Equipment, Functional Location, or custom asset and Test Equipment that you have specified in the Asset ID, Test Equipment ID No 1, Test Equipment ID No 2, and Test Equipment ID No 3 columns respectively.
12. The Calibration Result worksheet is processed. For the Calibration record specified in the Event ID column, if a Calibration Results record exists with the sequence:
 - If the value in the Calibration Results Family ID column is MI_CRAN0000, and the Calibration Results, Analog record that you have specified in the Event ID and Calibration Sequence Number columns exists, then the Calibration Results, Analog record is updated. Otherwise, it is created and linked to the Calibration, Analog record that you have specified in the Parent Key (Analog) column.
 - If the value in the Calibration Results Family ID column is MI_CRDS0000, and the Calibration Result, Discrete record that you have specified in the Event ID and Calibration Sequence Number columns exists, then the Calibration Result, Discrete record is updated. Otherwise, it is created and linked to the Calibration, Discrete record that you have specified in the Parent Key (Discrete) column.
 - If the value in the Calibration Results Family ID column is MI_CRANZR00, and the Calibration Results, Analyzer record that you have specified in the Event ID and Calibration Sequence Number columns exists, then the Calibration Results, Analyzer record is updated. Otherwise, it is created and linked to the Calibration, Analyzer Single Component or the Calibration, Analyzer Multi-Component record that you have specified in the Parent Key(Single/Multi Component) column.
13. The Calibration Recommendation worksheet is processed. The Data Loader searches for the record that you have specified in the Recommendation ID column. If the record exists, it is updated. Otherwise, it is created and linked to the Equipment, Functional Location, or custom asset and Calibration records that you have specified in the Asset ID and Event ID columns respectively.

About the Calibration Data Loader Workbook Layout and Use

To import data using the Calibration Data Loader, GE Digital APM provides the data loader workbook (`Calibration_DataLoader.xlsx`) that supports baseline Calibration Management in GE Digital APM. You must use this workbook to import data. You can modify the workbook to include custom fields used by your organization.

The following table provides a list of the worksheets that are included in the data loader workbook.

| Worksheet | Description |
|---------------------------|--|
| Batch | This worksheet is used to define the batches. Data is imported in batches. All the records that are assigned a particular batch number will be imported together. If a record in a batch is not imported, then none of the records in the batch are imported. |
| Test Equipment | This worksheet is used to create or update Test Equipment records. |
| Test Equipment History | This worksheet is used to create Test Equipment History records. If a Test Equipment History record with the same ID exists, it is deleted, and a new one is created based on the values you enter in this worksheet. |
| Standard Gas Cylinder | This worksheet is used to create or update Standard Gas Cylinder records. |
| Standard Gas Component | This worksheet is used to create Standard Gas Component records. If a Standard Gas Component record with the same ID exists, it is deleted, and a new one is created based on the values you enter in this worksheet. |
| Profile Template | This worksheet is used to create or update Calibration Profile Templates records. |
| Calibration Profile | This worksheet is used to create or update Calibration Profile records. |
| Analog Template | This worksheet is used to create or update Calibration Template, Analog records. |
| Discrete Template | This worksheet is used to create or update Calibration Template, Discrete records. |
| Single Component Template | This worksheet is used to create or update Calibration Template, Single Component Analyzer records. |
| Multi Component Template | This worksheet is used to create or update Calibration Template, Multi-Component Analyzer records. |
| Single Comp Temp Detail | <p>This worksheet is used to create or update Calibration Template Detail, Analyzer records.</p> <p>Note: You can use the same worksheet to create or update Calibration Template Detail, Analyzer records for a profile template or an applied template.</p> |
| Calibration Task | This worksheet is used to create or update Calibration Task records. |
| Calibration Event | <p>This worksheet is used to create or update the following records:</p> <ul style="list-style-type: none"> • Calibration, Analog • Calibration, Discrete • Calibration, Single Component Analyzer • Calibration, Multi-Component Analyzer |

| Worksheet | Description |
|----------------------------|---|
| Calibration Result | <p>For manual calibration, this worksheet is used to create or update the following records:</p> <ul style="list-style-type: none"> • Calibration Results, Analog • Calibration Result, Discrete • Calibration Results, Analyzer <p>You cannot, however, create or update the aforementioned records for an automated calibration.</p> |
| Calibration Recommendation | This worksheet is used to create or update Calibration Recommendation records. |
| (Picklist) | This worksheet provides a list of valid values available for fields that have pick lists. When you load data using the data loader, the data in this worksheet is not loaded. |

Color Coding

Certain columns on the worksheets have different functions and requirements. To illustrate this, certain columns are color-coded. The following table lists the colors and what they represent.

| Color | Description | Comments |
|-------|--|---|
| Grey | Lookup Fields | Indicates columns that contain values that are used by the Calibration Management Data Loader to look up and create records. If these columns are removed from the worksheets, the data load will fail. While the worksheets require that these columns be present, values are not necessarily required in these columns. |
| Red | Fields Required for Calculation | Indicates columns that contain values that are required to perform calculations. Some cells only require values in certain cases. Such cases are found in parentheses in the first row of each worksheet. |
| Blue | Recommended Fields | Indicates columns that are recommended to contain values. |
| Green | Custom Fields | Indicates columns where you can specify custom fields. |

Limitations

The Calibration Data Loader has the following limitations:

- You must use the data loader workbook. If you modify the format of the values in columns in any of the worksheets, you will not be able to import data.
- The values that you enter in the data loader workbook are case-sensitive.

- If you reimport data, the records that have been created by the Calibration Data Loader will be updated. Therefore, while reimporting data, if you remove the data for a field in the data loader workbook, the value for the corresponding field in GE Digital APM will be blank.

Batch

This worksheet is used to define batches.

| Field Caption | Field ID | Data Type (Length) | Comments |
|---------------|----------|--------------------|--|
| BATCH_ID | BATCH_ID | Numeric | A value is required and must be unique. Enter a batch number. Data related to all the rows that contain the same batch number in the remaining worksheets is imported in a single batch. |

Test Equipment Worksheet

The Test Equipment worksheet stores the details of the Test Equipment records.

| Field Caption | Field ID | Data Type (Length) | Comments |
|------------------------|---------------------------|--------------------|---|
| BATCH_ID | BATCH_ID | Numeric | A value is required and must match one of the values that you enter in the Batch worksheet. Additionally, all the records that are linked to one another must contain the same batch number. |
| Equipment ID | MI_TESTEQUIP_EQUIP_ID_C | Character (50) | A value is required and must be unique. This value identifies the Test Equipment. |
| Serial Number | MI_TESTEQUIP_SN_C | Numeric | A value is required. |
| Certification Interval | MI_TESTEQUIP_CERT_INTV_N | Numeric | A value is required. |
| Certification Units | MI_TESTEQUIP_CERT_UNITS_C | Character (50) | A value is required. This column may only contain one of the System Code IDs in the MI_TIME_UNITS System Code Table. Refer to the (Picklist) worksheet in the data loader workbook for a list of values that you can enter in this column. |
| Model Number | MI_TESTEQUIP_MOD_NO_C | Character (50) | A value is required. |
| Manufacturer | MI_TESTEQUIP_MFR_C | Character (50) | A value is required. |

| Field Caption | Field ID | Data Type (Length) | Comments |
|---|-------------------------------|--------------------|---|
| Last Certification Date | MI_TESTEQUIP_CERT_DATE_D | Date | A value is required. Enter the value in the following format: YYYY-MM-DD HH:mm:ss |
| Site Reference Name | MI_SITE_NAME | Character (255) | <p>Important: Site Reference records must preexist in GE Digital APM. The data loader does not create Site Reference records, but simply provides foreign key data in the asset records, as determined in the source workbook. If the site reference record does not preexist, then you will receive an error.</p> <ul style="list-style-type: none"> Enter the site name to designate which site the Test Equipment or Standard Gas Cylinder record, once loaded into GE Digital APM, will be filtered by. -or- Enter *Global* to indicate a that the site reference should be left global. Meaning that it will not be filtered by site in GE Digital APM. <p>Note: Only super users are permitted to update Site Reference records.</p> |
| Assigned To | MI_TESTEQUIP_ASSIGNED_TO_C | Character (50) | None |
| Category | MI_TESTEQUIP_SAP_CATEG_C | Character (50) | None |
| Certification Supplier is ISO/IEC 17025 Certified | MI_TESTEQUIP_CERT_SUPP_CERT_C | Character (5) | None |
| Class | MI_TESTEQUIP_SAP_CLASS_C | Character (50) | None |
| NIST Traceability Required | MI_TESTEQUIP_NIST_REQD_C | Character (5) | None |
| Purchase Date | MI_TESTEQUIP_PRCH_D | Date | Enter a value in the following format: YYYY-MM-DD HH:mm:ss |
| Purchase Order Number | MI_TESTEQUIP_PO_NO_C | Character (50) | None |
| Type | MI_TESTEQUIP_OBJ_TYP_C | Character (50) | None |

| Field Caption | Field ID | Data Type (Length) | Comments |
|----------------------|-------------------------------|--------------------|--|
| Last Check Date | MI_TESTEQUIP_LST_CHK_DATE_D | Date | Enter the value in the following format: YYYY-MM-DD HH:mm:ss |
| Check Interval | MI_TESTEQUIP_CHECK_INTV_N | Numeric | None |
| Check Interval Units | MI_TESTEQUIP_CHK_INTV_UNITS_C | Character (50) | This field is required only if the Check Interval field contains a value. This column may only contain one of the System Code IDs in the MI_TIME_UNITS System Code Table. Refer to the (Picklist) worksheet in the data loader workbook for a list of values that you can enter in this column. |
| Description | MI_TESTEQUIP_DESCR_C | Character (255) | None |
| Vendor | MI_TESTEQUIP_EQUIP_VNDR_C | Character (50) | None |
| Maintenance Plant | MI_TESTEQUIP_MAINT_PLANT_C | Character (50) | None |

Test Equipment History Worksheet

The Test Equipment History worksheet stores the details of the Test Equipment History records.

| Field Caption | Field ID | Data Type (Length) | Comments |
|----------------------|------------------------------|--------------------|--|
| BATCH_ID | BATCH_ID | Numeric | A value is required and must match one of the values that you enter in the Batch worksheet. Additionally, all the records that are linked to one another must contain the same batch number. |
| Parent ID | MI_TST_EQUIP_HIST_PARE_KEY_N | Character (50) | A value is required. This cell may only contain a value that exists in the list in the Test Equipment ID field for Test Equipment records. |
| Certification Date | MI_TST_EQUIP_HIST_CERT_DT_D | Date | A value is required. Enter the value in the following format: YYYY-MM-DD HH:mm:ss |
| Certification Number | MI_TST_EQUIP_HIST_CERT_NUM_C | Character (50) | A value is required. |
| Supplier | MI_TST_EQUIP_HIST_SUPPL_C | Character | A value is required. |

| Field Caption | Field ID | Data Type (Length) | Comments |
|---------------|----------------------------|--------------------|---|
| Entered By | MI_TST_EQUIP_HIST_ENT_BY_C | Character (50) | A value is required. |
| Date Created | MI_TST_EQUIP_HIST_DATE_C | Date | Enter a value in the following format: YYYY-MM-DD HH:mm:ss |

Standard Gas Cylinder Worksheet

The Standard Gas Cylinder worksheet stores the details of the Standard Gas Cylinder records.

| Field Caption | Field ID | Data Type (Length) | Comments |
|-----------------------------------|----------------------------|--------------------|---|
| BATCH_ID | BATCH_ID | Numeric | A value is required and must match one of the values that you enter in the Batch worksheet. Additionally, all the records that are linked to one another must contain the same batch number. |
| Standard Gas Cylinder ID | MI_SG000000_CYL_ID | Character (50) | A value is required. |
| Site Reference Name | MI_SITE_NAME | Character (50) | A value is required. |
| Standard Gas Cylinder Description | MI_SG000000_CYL_DESCR_C | Character (255) | None |
| Minimum Cylinder Pressure | MI_SG000000_MIN_CYL_PRES_N | Numeric | None |
| Actual Sample Volume | MI_SG000000_SMPL_VOL_N | Numeric | None |
| Laboratory Analysis Number | MI_SG000000_LAB_NBR_C | Character (50) | None |
| Cylinder Connection Number | MI_SG000000_CYL_CONN_C | Character (25) | This column may only contain one of the System Code IDs in the MI GAS CYLINDER CONNECTION NUMBER System Code Table. Refer to the (Picklist) worksheet in the data loader workbook for a list of values that you can enter in this column. |
| Cylinder Type | MI_SG000000_CYL_TYP_C | Character (50) | This column may only contain one of the System Code IDs in the MI GAS CYLINDER TYPE System Code Table. Refer to the (Picklist) worksheet in the data loader workbook for a list of values that you can enter in this column. |
| Cylinder Manufacturer | MI_SG000000_CYL_MFR_C | Character (50) | None |

| Field Caption | Field ID | Data Type (Length) | Comments |
|-----------------|---------------------------|--------------------|--|
| Cylinder Size | MI_SGCI0000_CYL_SZ_C | Character (25) | This column may only contain one of the System Code IDs in the MI GAS CYLINDER SIZE System Code Table. Refer to the (Picklist) worksheet in the data loader workbook for a list of values that you can enter in this column. |
| Expiration Date | MI_SGCI0000_CYL_EXP_D | Date | Enter a value in the following format: YYYY-MM-DD HH:mm:ss |
| In Service Date | MI_SGCI0000_CYL_IN_SRVC_D | Date | Enter a value in the following format: YYYY-MM-DD HH:mm:ss |
| Cylinder Owner | MI_SGCI0000_CYL_OWNR_C | Character (50) | None |

Standard Gas Component Worksheet

The Standard Gas Component worksheet stores details of Standard Gas Components.

| Field Caption | Field ID | Data Type (Length) | Comments |
|----------------------------|----------------------------|--------------------|--|
| BATCH_ID | BATCH_ID | Numeric | A value is required and must match one of the values that you enter in the Batch worksheet. Additionally, all the records that are linked to one another must contain the same batch number. |
| Standard Component Name | MI_SGCM0000_CMPNT_NM_C | Character (50) | A value is required. This column may only contain one of the System Code IDs in the MI CHEMICAL COMPONENTS System Code Table. Refer to the (Picklist) worksheet in the data loader workbook for a list of values that you can enter in this column. |
| Standard Analytical Result | MI_SGCM0000_ANLYTCL_RSLT_N | Numeric | A value is required. |

| Field Caption | Field ID | Data Type (Length) | Comments |
|-----------------------------------|--------------------------|--------------------|--|
| Standard Component UOM | MI_SGCM0000_CMPNT_UOM_C | Character (15) | A value is required. This column may only contain one of the System Code IDs in the UOME System Code Table. Refer to the (Picklist) worksheet in the data loader workbook for a list of values that you can enter in this column. |
| Parent Key | MI_SGCM0000_PARE_KEY_N | Numeric | A value is required. Enter the ID of the Standard Gas Cylinder. It will be converted to the parent key when you import data. |
| Standard Gas Cylinder Description | MI_SG000000_CYL_DESCR_C | Character (255) | None |
| Standard Blend Tolerance | MI_SGCM0000_BLND_TOL_N | Numeric | None |
| Standard Requested Value | MI_SGCM0000_REQ_VAL_N | Numeric | None |
| Standard Gas Cylinder ID | MI_SG000000_CYL_ID | Character (50) | Enter the ID of the Standard Gas Cylinder. |
| Standard Balance Content | MI_SGCM0000_BLNC_CNTNT_L | Boolean | Enter True or False. |

Profile Template Worksheet

The Profile Template worksheet stores the details of the Calibration Profile Template records.

| Field Caption | Field ID | Data Type (Length) | Comments |
|---------------|----------------|--------------------|--|
| BATCH_ID | BATCH_ID | Numeric | A value is required and must match one of the values that you enter in the Batch worksheet. Additionally, all the records that are linked to one another must contain the same batch number. |
| Template ID | MI_TM000000_ID | Character (255) | A value is required and must be unique. This value identifies the Template. |

| Field Caption | Field ID | Data Type (Length) | Comments | | | | | | | | | | |
|---------------------------|-------------------------|--------------------|--|------------------|-----------------------|--------|-------------|----------|-------------|---------------------------|-------------|--------------------------|-----------------|
| Calibration Family ID | Family_ID | Character (50) | <p>A value is required. Enter one of the following values based on the calibration type:</p> <table border="1"> <thead> <tr> <th>Calibration Type</th> <th>Calibration Family ID</th> </tr> </thead> <tbody> <tr> <td>Analog</td> <td>MI_TMCAAN00</td> </tr> <tr> <td>Discrete</td> <td>MI_TMCADSCT</td> </tr> <tr> <td>Single component analyzer</td> <td>MI_TMCASCAN</td> </tr> <tr> <td>Multi-component analyzer</td> <td>MI_TMCAMCA N</td> </tr> </tbody> </table> | Calibration Type | Calibration Family ID | Analog | MI_TMCAAN00 | Discrete | MI_TMCADSCT | Single component analyzer | MI_TMCASCAN | Multi-component analyzer | MI_TMCAMCA N |
| Calibration Type | Calibration Family ID | | | | | | | | | | | | |
| Analog | MI_TMCAAN00 | | | | | | | | | | | | |
| Discrete | MI_TMCADSCT | | | | | | | | | | | | |
| Single component analyzer | MI_TMCASCAN | | | | | | | | | | | | |
| Multi-component analyzer | MI_TMCAMCA N | | | | | | | | | | | | |
| Calibration Type | MI_TMCA0000_CAL_TYP_C | Character (50) | <p>A value is required.</p> <p>This column may only contain one of the System Code IDs in the MI_CALIBRATION_TYPE System Code Table. Refer to the (Picklist) worksheet in the data loader workbook for a list of values that you can enter in this column.</p> | | | | | | | | | | |
| Error Assessment | MI_TMCA0000_ERR_ASSES_C | Character (50) | <p>A value is required in the Calibration Template, Analog records, Calibration Template, Discrete, and Calibration Template, Single Component Analyzer records.</p> <p>This column may only contain one of the System Code IDs in the CALIBRATION_ERROR_ASSESSMENT System Code Table. Refer to the (Picklist) worksheet in the data loader workbook for a list of values that you can enter in this column.</p> | | | | | | | | | | |

| Field Caption | Field ID | Data Type (Length) | Comments | | | | | | | | | | |
|-----------------------------|---------------------------------|--------------------|---|------------------|-------------------|-----------|------|----------------------|----------------------------|--------------|----------------------------|-----|--------------------------|
| Input Type | MI_TMCA0000_INPUT_TYP_C | Character (50) | A value is required. This column may only contain one of the System Code IDs in the MI_CALIBRATION_IO_TYPES System Code Table. Refer to the (Picklist) worksheet in the data loader workbook for a list of values that you can enter in this column. | | | | | | | | | | |
| Output Type | MI_TMCA0000_OUTPU_TYP_C | Character (50) | A value is required. This column may only contain one of the System Code IDs in the MI_CALIBRATION_IO_TYPES System Code Table. Refer to the (Picklist) worksheet in the data loader workbook for a list of values that you can enter in this column. | | | | | | | | | | |
| Max Error Limit | MI_TMCA0000_ERR_LIM_N | Numeric | A value is required. | | | | | | | | | | |
| Primary Input LRV | MI_TMCA0000_PRI_IN_LRV_N | Numeric | A value is required. | | | | | | | | | | |
| Primary Input URV | MI_TMCA0000_PRI_IN_URV_N | Numeric | A value is required. | | | | | | | | | | |
| Primary Input Range Units | MI_TMCA0000_PRI_IN_RV_UO M_C | Character (10) | A value is required. Depending on the value in the Calibration Type field, this field contains one of the following System Code Tables: <table border="1" data-bbox="1146 1323 1414 1797"> <thead> <tr> <th>Calibration Type</th> <th>System Code Table</th> </tr> </thead> <tbody> <tr> <td>Fluke 74X</td> <td>UOME</td> </tr> <tr> <td>Druck DPI620 (Genii)</td> <td>CALIBRATION_DRUCK_UOM_LIST</td> </tr> <tr> <td>Druck DPI61x</td> <td>CALIBRATION_DRUCK_UOM_LIST</td> </tr> <tr> <td>CMX</td> <td>CALIBRATION_CMX_UOM_LIST</td> </tr> </tbody> </table> | Calibration Type | System Code Table | Fluke 74X | UOME | Druck DPI620 (Genii) | CALIBRATION_DRUCK_UOM_LIST | Druck DPI61x | CALIBRATION_DRUCK_UOM_LIST | CMX | CALIBRATION_CMX_UOM_LIST |
| Calibration Type | System Code Table | | | | | | | | | | | | |
| Fluke 74X | UOME | | | | | | | | | | | | |
| Druck DPI620 (Genii) | CALIBRATION_DRUCK_UOM_LIST | | | | | | | | | | | | |
| Druck DPI61x | CALIBRATION_DRUCK_UOM_LIST | | | | | | | | | | | | |
| CMX | CALIBRATION_CMX_UOM_LIST | | | | | | | | | | | | |
| Primary Output LRV (Analog) | MI_TMCA0000_PRI_OUT_LRV_N | Numeric | A value is required for analog calibration. | | | | | | | | | | |

| Field Caption | Field ID | Data Type (Length) | Comments | | | | | | | | | | |
|------------------------------|-------------------------------|--------------------|--|------------------|-------------------|-----------|------|----------------------|----------------------------|--------------|----------------------------|-----|--------------------------|
| Primary Output URV (Analog) | MI_TMCA0000_PRI_OUT_URV_N | Numeric | A value is required for an analog calibration. | | | | | | | | | | |
| Primary Output Units | MI_TMCA0000_PRI_OUT_UOM_C | Character (10) | <p>A value is required. Depending on the value in the Calibration Type field, this field contains one of the following System Code Tables:</p> <table border="1"> <thead> <tr> <th>Calibration Type</th> <th>System Code Table</th> </tr> </thead> <tbody> <tr> <td>Fluke 74X</td> <td>UOME</td> </tr> <tr> <td>Druck DPI620 (Genii)</td> <td>CALIBRATION_DRUCK_UOM_LIST</td> </tr> <tr> <td>Druck DPI61x</td> <td>CALIBRATION_DRUCK_UOM_LIST</td> </tr> <tr> <td>CMX</td> <td>CALIBRATION_CMX_UOM_LIST</td> </tr> </tbody> </table> | Calibration Type | System Code Table | Fluke 74X | UOME | Druck DPI620 (Genii) | CALIBRATION_DRUCK_UOM_LIST | Druck DPI61x | CALIBRATION_DRUCK_UOM_LIST | CMX | CALIBRATION_CMX_UOM_LIST |
| Calibration Type | System Code Table | | | | | | | | | | | | |
| Fluke 74X | UOME | | | | | | | | | | | | |
| Druck DPI620 (Genii) | CALIBRATION_DRUCK_UOM_LIST | | | | | | | | | | | | |
| Druck DPI61x | CALIBRATION_DRUCK_UOM_LIST | | | | | | | | | | | | |
| CMX | CALIBRATION_CMX_UOM_LIST | | | | | | | | | | | | |
| SW 1 Setpoint (Discrete) | MI_TMCA0000_SW1_SP_N | Numeric | A value is required for discrete calibration. | | | | | | | | | | |
| Activate Switch 1 (Discrete) | MI_TMCA0000_SPEC_INC_DEC_01_C | Numeric | A value is required for discrete calibration. | | | | | | | | | | |
| SW 1 Contact State | MI_TMCA0000_SW1_CNTCT_S_T_C | Numeric | <p>A value is required. Refer to the (Picklist) worksheet in the data loader workbook for a list of values that you can enter in this column.</p> <p>This field is enabled only when a value exists in the Calibration Strategy field.</p> | | | | | | | | | | |
| Reset Set Point | MI_TMCA0000_RESET_SET_POINT_N | Numeric | A value is required for discrete calibration using the GE Druck calibrators. | | | | | | | | | | |
| Ramp Time | MI_TMCA0000_RAMP_TIME_N | Numeric | A value is required for discrete calibration using the GE Druck calibrators. | | | | | | | | | | |
| Repeat Count | MI_TMCA0000_REP_COUNT_N | Numeric | A value is required for discrete calibration using the GE Druck calibrators. | | | | | | | | | | |

| Field Caption | Field ID | Data Type (Length) | Comments |
|---|------------------------------|--------------------|---|
| Calibration Strategy (Single Component) | MI_TMCA0000_STRATEGY_C | Character (25) | A value is required for single component analyzer calibration and must match the ID of an existing Calibration Strategy. |
| Template State | MI_TM000000_STATE_C | Character (50) | This column may only contain one of the System Code IDs in the MI_STATUS System Code Table. Refer to the (Picklist) worksheet in the data loader workbook for a list of values that you can enter in this column. |
| Loop Power | MI_TMCA0000_LOOP_PWR_C | Character (15) | If using the Fluke calibrator, this column may only contain one of the System Code IDs defined by the FLUKE POWER SOURCE value in the MI_CALIBRATION_REFERENCE S System Code Table. If using the GE Druck calibrator, this column may only contain one of the System Code IDs in the MI_CALIBRATION_YES_OR_NO System Code Table. Refer to the (Picklist) worksheet in the data loader workbook for a list of values that you can enter in this column. |
| Manual Entered Input Values | MI_TMCA0000_IN_MEV_L | Boolean | Enter True or False. |
| Manual Entered Output Values | MI_TMCA0000_OUT_MEV_FLG | Boolean | Enter True or False. |
| Performs Square Root | MI_TMCA0000_PERF_SQRT_C | Character (1) | This column may only contain one of the System Code IDs in the MI_YES_NO System Code Table. Refer to the (Picklist) worksheet in the data loader workbook for a list of values that you can enter in this column. |
| Enable Automated Calibrations | MI_TMCA0000_ENABL_AUTO_CAL_F | Boolean | Enter True or False. |
| Custom Input Lower Range Value | MI_TMCA0000_CUST_IN_LRV_N | Numeric | None |
| Custom Input Upper Range Value | MI_TMCA0000_CUST_IN_URV_N | Numeric | None |

| Field Caption | Field ID | Data Type (Length) | Comments | | | | | | | | | | |
|---------------------------------|-------------------------------|--------------------|--|------------------|-------------------|-----------|------|----------------------|----------------------------|--------------|----------------------------|-----|--------------------------|
| Custom Output Lower Range Value | MI_TMCA0000_CUST_OUT_LRV_N | Numeric | None | | | | | | | | | | |
| Custom Output Upper Range Value | MI_TMCA0000_CUST_OUT_URV_N | Numeric | None | | | | | | | | | | |
| Custom Input Range UOM | MI_TMCA0000_CUST_IN_RN_UOM_C | Character (50) | <p>A value is required. Depending on the value in the Calibration Type field, this field contains one of the following System Code Tables:</p> <table border="1"> <thead> <tr> <th>Calibration Type</th> <th>System Code Table</th> </tr> </thead> <tbody> <tr> <td>Fluke 74X</td> <td>UOME</td> </tr> <tr> <td>Druck DPI620 (Genii)</td> <td>CALIBRATION_DRUCK_UOM_LIST</td> </tr> <tr> <td>Druck DPI61x</td> <td>CALIBRATION_DRUCK_UOM_LIST</td> </tr> <tr> <td>CMX</td> <td>CALIBRATION_CMX_UOM_LIST</td> </tr> </tbody> </table> | Calibration Type | System Code Table | Fluke 74X | UOME | Druck DPI620 (Genii) | CALIBRATION_DRUCK_UOM_LIST | Druck DPI61x | CALIBRATION_DRUCK_UOM_LIST | CMX | CALIBRATION_CMX_UOM_LIST |
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| Fluke 74X | UOME | | | | | | | | | | | | |
| Druck DPI620 (Genii) | CALIBRATION_DRUCK_UOM_LIST | | | | | | | | | | | | |
| Druck DPI61x | CALIBRATION_DRUCK_UOM_LIST | | | | | | | | | | | | |
| CMX | CALIBRATION_CMX_UOM_LIST | | | | | | | | | | | | |
| Custom Output Range UOM | MI_TMCA0000_CUST_OUT_RN_UOM_C | Character (50) | <p>A value is required. Depending on the value in the Calibration Type field, this field contains one of the following System Code Tables:</p> <table border="1"> <thead> <tr> <th>Calibration Type</th> <th>System Code Table</th> </tr> </thead> <tbody> <tr> <td>Fluke 74X</td> <td>UOME</td> </tr> <tr> <td>Druck DPI620 (Genii)</td> <td>CALIBRATION_DRUCK_UOM_LIST</td> </tr> <tr> <td>Druck DPI61x</td> <td>CALIBRATION_DRUCK_UOM_LIST</td> </tr> <tr> <td>CMX</td> <td>CALIBRATION_CMX_UOM_LIST</td> </tr> </tbody> </table> | Calibration Type | System Code Table | Fluke 74X | UOME | Druck DPI620 (Genii) | CALIBRATION_DRUCK_UOM_LIST | Druck DPI61x | CALIBRATION_DRUCK_UOM_LIST | CMX | CALIBRATION_CMX_UOM_LIST |
| Calibration Type | System Code Table | | | | | | | | | | | | |
| Fluke 74X | UOME | | | | | | | | | | | | |
| Druck DPI620 (Genii) | CALIBRATION_DRUCK_UOM_LIST | | | | | | | | | | | | |
| Druck DPI61x | CALIBRATION_DRUCK_UOM_LIST | | | | | | | | | | | | |
| CMX | CALIBRATION_CMX_UOM_LIST | | | | | | | | | | | | |
| TC Linear | MI_TMCA0000_TC_LIN_F | Boolean | Enter True or False. | | | | | | | | | | |

| Field Caption | Field ID | Data Type (Length) | Comments |
|--------------------------|----------------------------|--------------------|---|
| RTD Wiring Configuration | MI_TMCA0000_RTD_WIR_CNFG_C | Character (50) | This column may only contain one of the System Code IDs by the RTD Wiring Configuration value in the MI_CALIBRATION_REFERENCES. Refer to the (Picklist) worksheet in the data loader workbook for a list of values that you can enter in this column. |
| Linear TC LRV | MI_TMCA0000_LIN_TC_LRV_N | Numeric | None |
| Linear TC URV | MI_TMCA0000_LIN_TC_URV_N | Numeric | None |
| Custom Output Values | MI_TMCA0000_CUST_OUT_VAL_F | Boolean | Enter True or False. |
| Custom Input Values | MI_TMCA0000_CUST_IN_VAL_F | Boolean | Enter True or False. |
| Temperature Element Type | MI_TMCA0000_TMP_EL_TP_C | Character (50) | This column may only contain one of the System Code IDs in the MI_CALIBRATION_REFERENCES System Code Table. Refer to the (Picklist) worksheet in the data loader workbook for a list of values that you can enter in this column. |

Calibration Profile Worksheet

The Calibration Profile worksheet stores the details of the Calibration Profile records.

| Field Caption | Field ID | Data Type (Length) | Comments |
|------------------|---------------------------|--------------------|--|
| BATCH_ID | BATCH_ID | Numeric | A value is required and must match one of the values that you enter in the Batch worksheet. Additionally, all the records that are linked to one another must contain the same batch number. |
| Profile ID | MI_CAL_PROF_PROF_ID_CHR | Character (255) | A value is required and must be unique. This value identifies the Calibration Profile. |
| Device Type | MI_CAL_PROF_DEVI_TYPE_C | Character (255) | A value is required. |
| Profile Template | MI_CAL_PROF_PROF_TEMP_CHR | Character (50) | A value is required. |

| Field Caption | Field ID | Data Type (Length) | Comments | | | | | | | | | | |
|----------------------------|------------------------------|--------------------|---|------------------|-----------------------|--------|-------------|----------|-------------|---------------------------|-------------|--------------------------|-------------|
| Calibration Strategy | MI_CAL_PROF_CALI_STRA_C | Character (50) | A value is required and must match the ID of an existing Calibration Strategy. | | | | | | | | | | |
| Profile Template Family ID | MI_CAL_PROF_TEMP_FMLY_ID_CHR | Character (50) | <p>A value is required. Enter one of the following values based on the calibration type:</p> <table border="1"> <thead> <tr> <th>Calibration Type</th> <th>Calibration Family ID</th> </tr> </thead> <tbody> <tr> <td>Analog</td> <td>MI_TMCAAN00</td> </tr> <tr> <td>Discrete</td> <td>MI_TMCADSCT</td> </tr> <tr> <td>Single component analyzer</td> <td>MI_TMCASCAN</td> </tr> <tr> <td>Multi-component analyzer</td> <td>MI_TMCAMCAN</td> </tr> </tbody> </table> | Calibration Type | Calibration Family ID | Analog | MI_TMCAAN00 | Discrete | MI_TMCADSCT | Single component analyzer | MI_TMCASCAN | Multi-component analyzer | MI_TMCAMCAN |
| Calibration Type | Calibration Family ID | | | | | | | | | | | | |
| Analog | MI_TMCAAN00 | | | | | | | | | | | | |
| Discrete | MI_TMCADSCT | | | | | | | | | | | | |
| Single component analyzer | MI_TMCASCAN | | | | | | | | | | | | |
| Multi-component analyzer | MI_TMCAMCAN | | | | | | | | | | | | |

Analog Template Worksheet

The Analog Template worksheet stores the details of the Calibration Template, Analog records.

| Field Caption | Field ID | Data Type (Length) | Comments |
|-------------------|--------------------------|--------------------|---|
| BATCH_ID | BATCH_ID | Numeric | A value is required and must match one of the values that you enter in the Batch worksheet. Additionally, all the records that are linked to one another must contain the same batch number. |
| Template ID | MI_TM000000_ID | Character (255) | A value is required and must be unique. This value identifies the Calibration Template, Analog record. After importing data, the value in this field (in the corresponding record in GE Digital APM) will be updated to include the values in the following fields: <ul style="list-style-type: none"> • Asset ID as configured in the Asset ID Configuration • Calibration Type • Calibration Strategy • Primary Input Range Units • Primary Output Range Units |
| Input Type | MI_TMCA0000_INPUT_TYP_C | Character (50) | A value is required. This column may only contain one of the System Code IDs in the MI_CALIBRATION_IO_TYPES System Code Table. Refer to the (Picklist) worksheet in the data loader workbook for a list of values that you can enter in this column. |
| Output Type | MI_TMCA0000_OUTPU_TYP_C | Character (50) | This column may only contain one of the System Code IDs in the MI_CALIBRATION_IO_TYPES System Code Table. Refer to the (Picklist) worksheet in the data loader workbook for a list of values that you can enter in this column. |
| Max Error Limit | MI_TMCA0000_ERR_LIM_N | Numeric | A value is required. |
| Primary Input LRV | MI_TMCA0000_PRI_IN_LRV_N | Numeric | A value is required. |
| Primary Input URV | MI_TMCA0000_PRI_IN_URV_N | Numeric | A value is required. |

| Field Caption | Field ID | Data Type (Length) | Comments | | | | | | | | | | |
|---------------------------|-----------------------------|--------------------|---|------------------|-------------------|-----------|------|----------------------|----------------------------|--------------|----------------------------|-----|--------------------------|
| Primary Input Range Units | MI_TMCA0000_PRI_IN_RV_UOM_C | Character (10) | <p>A value is required. Depending on the value in the Calibration Type field, this column must contain System Codes in one of the following System Code Tables:</p> <table border="1"> <thead> <tr> <th>Calibration Type</th> <th>System Code Table</th> </tr> </thead> <tbody> <tr> <td>Fluke 74X</td> <td>UOME</td> </tr> <tr> <td>Druck DPI620 (Genii)</td> <td>CALIBRATION_DRUCK_UOM_LIST</td> </tr> <tr> <td>Druck DPI61x</td> <td>CALIBRATION_DRUCK_UOM_LIST</td> </tr> <tr> <td>CMX</td> <td>CALIBRATION_CMX_UOM_LIST</td> </tr> </tbody> </table> | Calibration Type | System Code Table | Fluke 74X | UOME | Druck DPI620 (Genii) | CALIBRATION_DRUCK_UOM_LIST | Druck DPI61x | CALIBRATION_DRUCK_UOM_LIST | CMX | CALIBRATION_CMX_UOM_LIST |
| Calibration Type | System Code Table | | | | | | | | | | | | |
| Fluke 74X | UOME | | | | | | | | | | | | |
| Druck DPI620 (Genii) | CALIBRATION_DRUCK_UOM_LIST | | | | | | | | | | | | |
| Druck DPI61x | CALIBRATION_DRUCK_UOM_LIST | | | | | | | | | | | | |
| CMX | CALIBRATION_CMX_UOM_LIST | | | | | | | | | | | | |
| Primary Output LRV | MI_TMCA0000_PRI_OUT_LRV_N | Numeric | A value is required for analog and single component analyzer calibrations. | | | | | | | | | | |
| Primary Output URV | MI_TMCA0000_PRI_OUT_URV_N | Numeric | A value is required for analog and single component analyzer calibrations. | | | | | | | | | | |

| Field Caption | Field ID | Data Type (Length) | Comments | | | | | | | | | | |
|----------------------|----------------------------|--------------------|---|------------------|-------------------|-----------|------|----------------------|----------------------------|--------------|----------------------------|-----|--------------------------|
| Primary Output Units | MI_TMCA0000_PRI_OUT_UOM_C | Character (10) | <p>A value is required. Depending on the value in the Calibration Type field, this column must contain System Codes in one of the following System Code Tables:</p> <table border="1"> <thead> <tr> <th>Calibration Type</th> <th>System Code Table</th> </tr> </thead> <tbody> <tr> <td>Fluke 74X</td> <td>UOME</td> </tr> <tr> <td>Druck DPI620 (Genii)</td> <td>CALIBRATION_DRUCK_UOM_LIST</td> </tr> <tr> <td>Druck DPI61x</td> <td>CALIBRATION_DRUCK_UOM_LIST</td> </tr> <tr> <td>CMX</td> <td>CALIBRATION_CMX_UOM_LIST</td> </tr> </tbody> </table> | Calibration Type | System Code Table | Fluke 74X | UOME | Druck DPI620 (Genii) | CALIBRATION_DRUCK_UOM_LIST | Druck DPI61x | CALIBRATION_DRUCK_UOM_LIST | CMX | CALIBRATION_CMX_UOM_LIST |
| Calibration Type | System Code Table | | | | | | | | | | | | |
| Fluke 74X | UOME | | | | | | | | | | | | |
| Druck DPI620 (Genii) | CALIBRATION_DRUCK_UOM_LIST | | | | | | | | | | | | |
| Druck DPI61x | CALIBRATION_DRUCK_UOM_LIST | | | | | | | | | | | | |
| CMX | CALIBRATION_CMX_UOM_LIST | | | | | | | | | | | | |
| Asset ID | ASSET_ID | Numeric | <p>A value is required. Enter the Asset ID that corresponds to the Asset ID configured in Asset ID Configuration for Equipment, Functional Location, or custom asset that is linked to the Calibration Template. If the value that you enter does not match the Asset ID of any Equipment, Functional Location, or custom asset in the GE Digital APM database, an error message appears, stating that the Asset is not found, and the batch is not imported.</p> | | | | | | | | | | |
| Asset Family ID | ASSET_FAMILY_ID | Numeric | <p>A value is required. If the Asset corresponds to an Equipment record, then enter MI_EQUIP000. If the Asset corresponds to a Functional Location record, then enter MI_FNCLOC00. If the Asset corresponds to any of the custom asset record, then enter family ID of that asset family.</p> | | | | | | | | | | |

| Field Caption | Field ID | Data Type (Length) | Comments |
|------------------------------|-------------------------|--------------------|---|
| Profile ID | MI_CAL_PROF_PROF_ID_CHR | Character (255) | A value is required and must be unique. This value identifies the Calibration Profile. Note: The Profile ID will create a relationship between this Applied Template and the Profile. |
| Error Assessment | MI_TMCA0000_ERR_ASSES_C | Character (50) | A value is required. This column may only contain one of the System Code IDs in the CALIBRATION_ERROR_ASSESSMENT System Code Table. Refer to the (Picklist) worksheet in the data loader workbook for a list of values that you can enter in this column. |
| Template State | MI_TM000000_STATE_C | Character (50) | This column may only contain one of the System Code IDs in the MI_STATUS System Code Table. Refer to the (Picklist) worksheet in the data loader workbook for a list of values that you can enter in this column. |
| Loop Power | MI_TMCA0000_LOOP_PWR_C | Character (15) | If using the Fluke calibrator, this column may only contain one of the System Code IDs defined by the FLUKE POWER SOURCE value in the MI_CALIBRATION_REFERENCE S System Code Table. If using the GE Druck calibrator, this column may only contain one of the System Code IDs in the MI_CALIBRATION_YES_OR_NO System Code Table. Refer to the (Picklist) worksheet in the data loader workbook for a list of values that you can enter in this column. |
| Manual Entered Input Values | MI_TMCA0000_IN_MEV_L | Boolean | Enter True or False. |
| Manual Entered Output Values | MI_TMCA0000_OUT_MEV_FLG | Boolean | Enter True or False. |

| Field Caption | Field ID | Data Type (Length) | Comments | | | | | | | | | | |
|---------------------------------|------------------------------|--------------------|--|------------------|-------------------|-----------|------|----------------------|----------------------------|--------------|----------------------------|-----|--------------------------|
| Performs Square Root | MI_TMCA0000_PERF_SQRT_C | Character (1) | This column may only contain one of the System Code IDs in the MI_YES_NO System Code Table. Refer to the (Picklist) worksheet in the data loader workbook for a list of values that you can enter in this column. | | | | | | | | | | |
| Enable Automated Calibrations | MI_TMCA0000_ENABL_AUTO_CAL_F | Boolean | Enter True or False. | | | | | | | | | | |
| Custom Input Lower Range Value | MI_TMCA0000_CUST_IN_LRV_N | Numeric | None | | | | | | | | | | |
| Custom Input Upper Range Value | MI_TMCA0000_CUST_IN_URV_N | Numeric | None | | | | | | | | | | |
| Custom Output Lower Range Value | MI_TMCA0000_CUST_OUT_LRV_N | Numeric | None | | | | | | | | | | |
| Custom Output Upper Range Value | MI_TMCA0000_CUST_OUT_URV_N | Numeric | None | | | | | | | | | | |
| Custom Input Range UOM | MI_TMCA0000_CUST_IN_RN_UOM_C | Character (50) | <p>A value is required. Depending on the calibration type, this column must contain System Codes in one of the following System Code Tables:</p> <table border="1"> <thead> <tr> <th>Calibration Type</th> <th>System Code Table</th> </tr> </thead> <tbody> <tr> <td>Fluke 74X</td> <td>UOME</td> </tr> <tr> <td>Druck DPI620 (Genii)</td> <td>CALIBRATION_DRUCK_UOM_LIST</td> </tr> <tr> <td>Druck DPI61x</td> <td>CALIBRATION_DRUCK_UOM_LIST</td> </tr> <tr> <td>CMX</td> <td>CALIBRATION_CMX_UOM_LIST</td> </tr> </tbody> </table> | Calibration Type | System Code Table | Fluke 74X | UOME | Druck DPI620 (Genii) | CALIBRATION_DRUCK_UOM_LIST | Druck DPI61x | CALIBRATION_DRUCK_UOM_LIST | CMX | CALIBRATION_CMX_UOM_LIST |
| Calibration Type | System Code Table | | | | | | | | | | | | |
| Fluke 74X | UOME | | | | | | | | | | | | |
| Druck DPI620 (Genii) | CALIBRATION_DRUCK_UOM_LIST | | | | | | | | | | | | |
| Druck DPI61x | CALIBRATION_DRUCK_UOM_LIST | | | | | | | | | | | | |
| CMX | CALIBRATION_CMX_UOM_LIST | | | | | | | | | | | | |

| Field Caption | Field ID | Data Type (Length) | Comments | | | | | | | | | | |
|--------------------------|-------------------------------|--------------------|--|------------------|-------------------|-----------|------|----------------------|----------------------------|--------------|----------------------------|-----|--------------------------|
| Custom Output Range UOM | MI_TMCA0000_CUST_OUT_RN_UOM_C | Character (50) | <p>A value is required. Depending on the calibration type, this column must contain System Codes in one of the following System Code Tables:</p> <table border="1"> <thead> <tr> <th>Calibration Type</th> <th>System Code Table</th> </tr> </thead> <tbody> <tr> <td>Fluke 74X</td> <td>UOME</td> </tr> <tr> <td>Druck DPI620 (Genii)</td> <td>CALIBRATION_DRUCK_UOM_LIST</td> </tr> <tr> <td>Druck DPI61x</td> <td>CALIBRATION_DRUCK_UOM_LIST</td> </tr> <tr> <td>CMX</td> <td>CALIBRATION_CMX_UOM_LIST</td> </tr> </tbody> </table> | Calibration Type | System Code Table | Fluke 74X | UOME | Druck DPI620 (Genii) | CALIBRATION_DRUCK_UOM_LIST | Druck DPI61x | CALIBRATION_DRUCK_UOM_LIST | CMX | CALIBRATION_CMX_UOM_LIST |
| Calibration Type | System Code Table | | | | | | | | | | | | |
| Fluke 74X | UOME | | | | | | | | | | | | |
| Druck DPI620 (Genii) | CALIBRATION_DRUCK_UOM_LIST | | | | | | | | | | | | |
| Druck DPI61x | CALIBRATION_DRUCK_UOM_LIST | | | | | | | | | | | | |
| CMX | CALIBRATION_CMX_UOM_LIST | | | | | | | | | | | | |
| TC Linear | MI_TMCA0000_TC_LIN_F | Boolean | Enter True or False. | | | | | | | | | | |
| RTD Wiring Configuration | MI_TMCA0000_RTD_WIR_CNFG_C | Character (50) | This column may only contain one of the System Code IDs by the RTD Wiring Configuration value in the MI_CALIBRATION_REFERENCE S. Refer to the (Picklist) worksheet in the data loader workbook for a list of values that you can enter in this column. | | | | | | | | | | |
| Linear TC LRV | MI_TMCA0000_LIN_TC_LRV_N | Numeric | None | | | | | | | | | | |
| Linear TC URV | MI_TMCA0000_LIN_TC_URV_N | Numeric | None | | | | | | | | | | |
| Custom Output Values | MI_TMCA0000_CUST_OUT_VAL_F | Boolean | Enter True or False. | | | | | | | | | | |
| Custom Input Values | MI_TMCA0000_CUST_IN_VAL_F | Boolean | Enter True or False. | | | | | | | | | | |
| Temperature Element Type | MI_TMCA0000_TMP_EL_TP_C | Character (50) | This column may only contain one of the System Code IDs in the MI_CALIBRATION_REFERENCE S System Code Table. Refer to the (Picklist) worksheet in the data loader workbook for a list of values that you can enter in this column. | | | | | | | | | | |

Discrete Template Worksheet

The Discrete Template worksheet stores the details of the Calibration Template, Discrete records.

| Field Caption | Field ID | Data Type (Length) | Comments |
|-------------------|--------------------------|--------------------|--|
| BATCH_ID | BATCH_ID | Numeric | A value is required and must match one of the values that you enter in the Batch worksheet. Additionally, all the records that are linked to one another must contain the same batch number. |
| Template ID | MI_TM000000_ID | Character (255) | A value is required and must be unique. This value identifies the Template. After importing the data, the value in this field (in the corresponding record in GE Digital APM) will be updated to include the values in the following fields: <ul style="list-style-type: none"> Asset ID as configured in the Asset ID Configuration Calibration Type Calibration Strategy Primary Input Range Units |
| Input Type | MI_TMCA0000_INPUT_TYP_C | Character (50) | A value is required. This column may only contain one of the System Code IDs in the MI_CALIBRATION_IO_TYPES System Code Table. Refer to the (Picklist) worksheet in the data loader workbook for a list of values that you can enter in this column. |
| Output Type | MI_TMCA0000_OUTPU_TYP_C | Character (50) | A value is required. This column may only contain one of the System Code IDs in the MI_CALIBRATION_IO_TYPES System Code Table. Refer to the (Picklist) worksheet in the data loader workbook for a list of values that you can enter in this column. |
| Max Error Limit | MI_TMCA0000_ERR_LIM_N | Numeric | A value is required. |
| Primary Input LRV | MI_TMCA0000_PRI_IN_LRV_N | Numeric | A value is required. |

| Field Caption | Field ID | Data Type (Length) | Comments | | | | | | | | | | |
|---------------------------|-------------------------------|--------------------|---|------------------|-------------------|-----------|------|----------------------|----------------------------|--------------|----------------------------|-----|--------------------------|
| Primary Input URV | Primary Input URV | Primary Input URV | A value is required. | | | | | | | | | | |
| Primary Input Range Units | MI_TMCA0000_PRI_IN_RV_UOM_C | Character (10) | <p>A value is required. Depending on the calibration type, this column must contain a value from one of the following System Code Tables:</p> <table border="1"> <thead> <tr> <th>Calibration Type</th> <th>System Code Table</th> </tr> </thead> <tbody> <tr> <td>Fluke 74X</td> <td>UOME</td> </tr> <tr> <td>Druck DPI620 (Genii)</td> <td>CALIBRATION_DRUCK_UOM_LIST</td> </tr> <tr> <td>Druck DPI61x</td> <td>CALIBRATION_DRUCK_UOM_LIST</td> </tr> <tr> <td>CMX</td> <td>CALIBRATION_CMX_UOM_LIST</td> </tr> </tbody> </table> | Calibration Type | System Code Table | Fluke 74X | UOME | Druck DPI620 (Genii) | CALIBRATION_DRUCK_UOM_LIST | Druck DPI61x | CALIBRATION_DRUCK_UOM_LIST | CMX | CALIBRATION_CMX_UOM_LIST |
| Calibration Type | System Code Table | | | | | | | | | | | | |
| Fluke 74X | UOME | | | | | | | | | | | | |
| Druck DPI620 (Genii) | CALIBRATION_DRUCK_UOM_LIST | | | | | | | | | | | | |
| Druck DPI61x | CALIBRATION_DRUCK_UOM_LIST | | | | | | | | | | | | |
| CMX | CALIBRATION_CMX_UOM_LIST | | | | | | | | | | | | |
| SW 1 Setpoint | MI_TMCA0000_SW1_SP_N | Numeric | A value is required. | | | | | | | | | | |
| Activate Switch 1 | MI_TMCA0000_SPEC_INC_DEC_01_C | Numeric | A value is required. | | | | | | | | | | |
| SW 1 Contact State | MI_TMCA0000_SW1_CNTCT_STATE_C | Numeric | A value is required. Refer to the (Picklist) worksheet in the data loader workbook for a list of values that you can enter in this column. | | | | | | | | | | |
| Reset Set Point | MI_TMCA0000_RESET_SET_POINT_N | Numeric | A value is required. | | | | | | | | | | |
| Ramp Time | MI_TMCA0000_RAMP_TIME_N | Numeric | A value is required. | | | | | | | | | | |
| Repeat Count | MI_TMCA0000_REP_COUNT_N | Numeric | A value is required. | | | | | | | | | | |

| Field Caption | Field ID | Data Type (Length) | Comments |
|-----------------|-------------------------|--------------------|--|
| Asset ID | ASSET_ID | Numeric | A value is required. Enter the Asset ID that corresponds to the Asset ID configured in Asset ID Configuration for Equipment, Functional Location, or custom asset that is linked to the Calibration Template. If the value that you enter does not match the Asset ID of any Equipment, Functional Location, or custom asset in the GE Digital APM database, an error message appears, stating that the Asset is not found, and the batch is not imported. |
| Asset Family ID | ASSET_FAMILY_ID | Numeric | A value is required. If the Asset corresponds to an Equipment record, then enter MI_EQUIP000. If the Asset corresponds to a Functional Location record, then enter MI_FNCLOC00. If the Asset corresponds to any of the custom asset record, then enter family ID of that asset family. |
| Profile ID | MI_CAL_PROF_PROF_ID_CHR | Character (255) | A value is required and must be unique. This value identifies the Calibration Profile. Note: The Profile ID will create a relationship between this Applied Template and the Profile. |
| Template State | MI_TM000000_STATE_C | Character (50) | This column may only contain one of the System Code IDs in the MI_STATUS System Code Table. Refer to the (Picklist) worksheet in the data loader workbook for a list of values that you can enter in this column. |

| Field Caption | Field ID | Data Type (Length) | Comments |
|---------------------------------|------------------------------|--------------------|---|
| Loop Power | MI_TMCA0000_LOOP_PWR_C | Character (15) | If using the Fluke calibrator, this column may only contain one of the System Code IDs defined by the FLUKE POWER SOURCE value in the MI_CALIBRATION_REFERENCE S System Code Table. If using the GE Druck calibrator, this column may only contain one of the System Code IDs in the MI_CALIBRATION_YES_OR_NO System Code Table. Refer to the (Picklist) worksheet in the data loader workbook for a list of values that you can enter in this column. |
| Manual Entered Input Values | MI_TMCA0000_IN_MEV_L | Boolean | Enter True or False. |
| Manual Entered Output Values | MI_TMCA0000_OUT_MEV_FLG | Boolean | Enter True or False. |
| Performs Square Root | MI_TMCA0000_PERF_SQRT_C | Character (1) | This column may only contain one of the System Code IDs in the MI_YES_NO System Code Table. Refer to the (Picklist) worksheet in the data loader workbook for a list of values that you can enter in this column. |
| Enable Automated Calibrations | MI_TMCA0000_ENABL_AUTO_CAL_F | Boolean | Enter True or False. |
| Custom Input Lower Range Value | MI_TMCA0000_CUST_IN_LRV_N | Numeric | None |
| Custom Input Upper Range Value | MI_TMCA0000_CUST_IN_URV_N | Numeric | None |
| Custom Output Lower Range Value | MI_TMCA0000_CUST_OUT_LRV_N | Numeric | None |
| Custom Output Upper Range Value | MI_TMCA0000_CUST_OUT_URV_N | Numeric | None |

| Field Caption | Field ID | Data Type (Length) | Comments | | | | | | | | | | |
|-------------------------|-------------------------------|--------------------|--|------------------|-------------------|-----------|------|----------------------|----------------------------|--------------|----------------------------|-----|--------------------------|
| Custom Input Range UOM | MI_TMCA0000_CUST_IN_RN_UOM_C | Character (50) | <p>Depending on the calibration type, this column must contain System Codes in one of the following System Code Tables:</p> <table border="1"> <thead> <tr> <th>Calibration Type</th> <th>System Code Table</th> </tr> </thead> <tbody> <tr> <td>Fluke 74X</td> <td>UOME</td> </tr> <tr> <td>Druck DPI620 (Genii)</td> <td>CALIBRATION_DRUCK_UOM_LIST</td> </tr> <tr> <td>Druck DPI61x</td> <td>CALIBRATION_DRUCK_UOM_LIST</td> </tr> <tr> <td>CMX</td> <td>CALIBRATION_CMX_UOM_LIST</td> </tr> </tbody> </table> | Calibration Type | System Code Table | Fluke 74X | UOME | Druck DPI620 (Genii) | CALIBRATION_DRUCK_UOM_LIST | Druck DPI61x | CALIBRATION_DRUCK_UOM_LIST | CMX | CALIBRATION_CMX_UOM_LIST |
| Calibration Type | System Code Table | | | | | | | | | | | | |
| Fluke 74X | UOME | | | | | | | | | | | | |
| Druck DPI620 (Genii) | CALIBRATION_DRUCK_UOM_LIST | | | | | | | | | | | | |
| Druck DPI61x | CALIBRATION_DRUCK_UOM_LIST | | | | | | | | | | | | |
| CMX | CALIBRATION_CMX_UOM_LIST | | | | | | | | | | | | |
| Custom Output Range UOM | MI_TMCA0000_CUST_OUT_RN_UOM_C | Character (50) | <p>A value is required. Depending on the calibration type, this column must contain System Codes in one of the following System Code Tables:</p> <table border="1"> <thead> <tr> <th>Calibration Type</th> <th>System Code Table</th> </tr> </thead> <tbody> <tr> <td>Fluke 74X</td> <td>UOME</td> </tr> <tr> <td>Druck DPI620 (Genii)</td> <td>CALIBRATION_DRUCK_UOM_LIST</td> </tr> <tr> <td>Druck DPI61x</td> <td>CALIBRATION_DRUCK_UOM_LIST</td> </tr> <tr> <td>CMX</td> <td>CALIBRATION_CMX_UOM_LIST</td> </tr> </tbody> </table> | Calibration Type | System Code Table | Fluke 74X | UOME | Druck DPI620 (Genii) | CALIBRATION_DRUCK_UOM_LIST | Druck DPI61x | CALIBRATION_DRUCK_UOM_LIST | CMX | CALIBRATION_CMX_UOM_LIST |
| Calibration Type | System Code Table | | | | | | | | | | | | |
| Fluke 74X | UOME | | | | | | | | | | | | |
| Druck DPI620 (Genii) | CALIBRATION_DRUCK_UOM_LIST | | | | | | | | | | | | |
| Druck DPI61x | CALIBRATION_DRUCK_UOM_LIST | | | | | | | | | | | | |
| CMX | CALIBRATION_CMX_UOM_LIST | | | | | | | | | | | | |
| TC Linear | MI_TMCA0000_TC_LIN_F | Boolean | Enter True or False. | | | | | | | | | | |

| Field Caption | Field ID | Data Type (Length) | Comments |
|--------------------------|--------------------------------|--------------------|--|
| RTD Wiring Configuration | MI_TMCA0000_RTD_WIR_CNF G_C | Character (50) | This column may only contain one of the System Code IDs by the RTD Wiring Configuration value in the MI_CALIBRATION_REFERENCE S. Refer to the (Picklist) worksheet in the data loader workbook for a list of values that you can enter in this column. |
| Linear TC LRV | MI_TMCA0000_LIN_TC_LRV_N | Numeric | None |
| Linear TC URV | MI_TMCA0000_LIN_TC_URV_N | Numeric | None |
| Custom Output Values | MI_TMCA0000_CUST_OUT_VAL _F | Boolean | Enter True or False. |
| Custom Input Values | MI_TMCA0000_CUST_IN_VAL_F | Boolean | Enter True or False. |
| Temperature Element Type | MI_TMCA0000_TMP_EL_TP_C | Character (50) | This column may only contain one of the System Code IDs in the MI_CALIBRATION_REFERENCE S System Code Table. Refer to the (Picklist) worksheet in the data loader workbook for a list of values that you can enter in this column. |

| Field Caption | Field ID | Data Type (Length) | Comments | | | | | | | | | | |
|----------------------|----------------------------|--------------------|---|------------------|-------------------|-----------|------|----------------------|----------------------------|--------------|----------------------------|-----|--------------------------|
| Error Assessment | MI_TMCA0000_ERR_ASSES_C | Character (50) | <p>A value is required.</p> <p>This column may only contain one of the System Code IDs in the CALIBRATION_ERROR_ASSESSMENT System Code Table. Refer to the (Picklist) worksheet in the data loader workbook for a list of values that you can enter in this column.</p> | | | | | | | | | | |
| Primary Output Units | MI_TMCA0000_PRI_OUT_UOM_C | Character (10) | <p>Depending on the value in the Calibration Type field, this column may contain System Codes in one of the following System Code Tables:</p> <table border="1"> <thead> <tr> <th>Calibration Type</th> <th>System Code Table</th> </tr> </thead> <tbody> <tr> <td>Fluke 74X</td> <td>UOME</td> </tr> <tr> <td>Druck DPI620 (Genii)</td> <td>CALIBRATION_DRUCK_UOM_LIST</td> </tr> <tr> <td>Druck DPI61x</td> <td>CALIBRATION_DRUCK_UOM_LIST</td> </tr> <tr> <td>CMX</td> <td>CALIBRATION_CMX_UOM_LIST</td> </tr> </tbody> </table> | Calibration Type | System Code Table | Fluke 74X | UOME | Druck DPI620 (Genii) | CALIBRATION_DRUCK_UOM_LIST | Druck DPI61x | CALIBRATION_DRUCK_UOM_LIST | CMX | CALIBRATION_CMX_UOM_LIST |
| Calibration Type | System Code Table | | | | | | | | | | | | |
| Fluke 74X | UOME | | | | | | | | | | | | |
| Druck DPI620 (Genii) | CALIBRATION_DRUCK_UOM_LIST | | | | | | | | | | | | |
| Druck DPI61x | CALIBRATION_DRUCK_UOM_LIST | | | | | | | | | | | | |
| CMX | CALIBRATION_CMX_UOM_LIST | | | | | | | | | | | | |

Single Component Template Worksheet

The Single Component Template worksheet stores the details of the Calibration Template, Single Component Analyzer records.

| Field Caption | Field ID | Data Type (Length) | Comments |
|---------------|----------------|--------------------|--|
| BATCH_ID | BATCH_ID | Numeric | A value is required and must match one of the values that you enter in the Batch worksheet. Additionally, all the records that are linked to one another must contain the same batch number. |
| Template ID | MI_TM000000_ID | Character (255) | A value is required. |

| Field Caption | Field ID | Data Type (Length) | Comments | | | | | | | | | | |
|---------------------------|---------------------------------|--------------------|---|------------------|-------------------|-----------|------|----------------------|------------------------------|--------------|------------------------------|-----|----------------------------|
| Input Type | MI_TMCA0000_INPUT_TYP_C | Character (50) | A value is required. This column may only contain one of the System Code IDs in the MI CALIBRATION IO TYPES System Code Table. Refer to the (Picklist) worksheet in the data loader workbook for a list of values that you can enter in this column. | | | | | | | | | | |
| Output Type | MI_TMCA0000_OUTPU_TYP_C | Character (50) | A value is required. This column may only contain one of the System Code IDs in the MI CALIBRATION IO TYPES System Code Table. Refer to the (Picklist) worksheet in the data loader workbook for a list of values that you can enter in this column. | | | | | | | | | | |
| Calibration Strategy | MI_TMCA0000_STRATEGY_C | Character (25) | A value is required and must match the ID of an existing Calibration Strategy. | | | | | | | | | | |
| Primary Input LRV | MI_TMCA0000_PRI_IN_LRV_N | Numeric | A value is required. | | | | | | | | | | |
| Primary Input URV | MI_TMCA0000_PRI_IN_URV_N | Numeric | A value is required. | | | | | | | | | | |
| Primary Input Range Units | MI_TMCA0000_PRI_IN_RV_UO M_C | Character (50) | A value is required. Depending on the calibration type, this column must contain System Codes in one of the following System Code Tables: <table border="1" data-bbox="1146 1318 1414 1793"> <thead> <tr> <th>Calibration Type</th> <th>System Code Table</th> </tr> </thead> <tbody> <tr> <td>Fluke 74X</td> <td>UOME</td> </tr> <tr> <td>Druck DPI620 (Genii)</td> <td>CALIBRATION_ DRUCK_UOM_ LIST</td> </tr> <tr> <td>Druck DPI61x</td> <td>CALIBRATION_ DRUCK_UOM_ LIST</td> </tr> <tr> <td>CMX</td> <td>CALIBRATION_ CMX_UOM_LIS T</td> </tr> </tbody> </table> | Calibration Type | System Code Table | Fluke 74X | UOME | Druck DPI620 (Genii) | CALIBRATION_ DRUCK_UOM_ LIST | Druck DPI61x | CALIBRATION_ DRUCK_UOM_ LIST | CMX | CALIBRATION_ CMX_UOM_LIS T |
| Calibration Type | System Code Table | | | | | | | | | | | | |
| Fluke 74X | UOME | | | | | | | | | | | | |
| Druck DPI620 (Genii) | CALIBRATION_ DRUCK_UOM_ LIST | | | | | | | | | | | | |
| Druck DPI61x | CALIBRATION_ DRUCK_UOM_ LIST | | | | | | | | | | | | |
| CMX | CALIBRATION_ CMX_UOM_LIS T | | | | | | | | | | | | |
| Primary Output LRV | MI_TMCA0000_PRI_OUT_LRV_ N | Numeric | A value is required. | | | | | | | | | | |

| Field Caption | Field ID | Data Type (Length) | Comments | | | | | | | | | | |
|----------------------|----------------------------|--------------------|--|------------------|-------------------|-----------|------|----------------------|----------------------------|--------------|----------------------------|-----|--------------------------|
| Primary Output URV | MI_TMCA0000_PRI_OUT_URV_N | Numeric | A value is required. | | | | | | | | | | |
| Primary Output Units | MI_TMCA0000_PRI_OUT_UOM_C | Character (50) | <p>A value is required. Depending on the calibration type, this column must contain System Codes in one of the following System Code Tables:</p> <table border="1"> <thead> <tr> <th>Calibration Type</th> <th>System Code Table</th> </tr> </thead> <tbody> <tr> <td>Fluke 74X</td> <td>UOME</td> </tr> <tr> <td>Druck DPI620 (Genii)</td> <td>CALIBRATION_DRUCK_UOM_LIST</td> </tr> <tr> <td>Druck DPI61x</td> <td>CALIBRATION_DRUCK_UOM_LIST</td> </tr> <tr> <td>CMX</td> <td>CALIBRATION_CMX_UOM_LIST</td> </tr> </tbody> </table> | Calibration Type | System Code Table | Fluke 74X | UOME | Druck DPI620 (Genii) | CALIBRATION_DRUCK_UOM_LIST | Druck DPI61x | CALIBRATION_DRUCK_UOM_LIST | CMX | CALIBRATION_CMX_UOM_LIST |
| Calibration Type | System Code Table | | | | | | | | | | | | |
| Fluke 74X | UOME | | | | | | | | | | | | |
| Druck DPI620 (Genii) | CALIBRATION_DRUCK_UOM_LIST | | | | | | | | | | | | |
| Druck DPI61x | CALIBRATION_DRUCK_UOM_LIST | | | | | | | | | | | | |
| CMX | CALIBRATION_CMX_UOM_LIST | | | | | | | | | | | | |
| Calibration Type | MI_TMCA0000_CAL_TYP_C | Character (50) | <p>A value is required.</p> <p>This column may only contain one of the System Code IDs in the MI_CALIBRATION_TYPE System Code Table. Refer to the (Picklist) worksheet in the data loader workbook for a list of values that you can enter in this column.</p> | | | | | | | | | | |
| Asset ID | ASSET_ID | Numeric | <p>A value is required. Enter the Asset ID that corresponds to the Asset ID configured in Asset ID Configuration for Equipment, Functional Location, or custom asset that is linked to the Calibration Template. If the value that you enter does not match the Asset ID of any Equipment, Functional Location, or custom asset in the GE Digital APM database, an error message appears, stating that the Asset is not found, and the batch is not imported.</p> | | | | | | | | | | |

| Field Caption | Field ID | Data Type (Length) | Comments |
|---------------------------------|---------------------------|--------------------|--|
| Asset Family ID | ASSET_FAMILY_ID | Numeric | A value is required. If the Asset corresponds to an Equipment record, then enter MI_EQUIP000. If the Asset corresponds to a Functional Location record, then enter MI_FNCLOC00. If the Asset corresponds to any of the custom asset record, then enter family ID of that asset family. |
| Profile ID | MI_CAL_PROF_PROF_ID_CHR | Character (255) | A value is required and must be unique. This value identifies the Calibration Profile. Note: The Profile ID will create a relationship between this Applied Template and the Profile. |
| Template Short Description | MI_TM000000_SHRT_DSC_C | Character (255) | None |
| Enterprise <number> Code | MI_TM000000_ERP_01_CD_C | Character (50) | None |
| Enterprise <number> Description | MI_TM000000_ERP_01_DESC_C | Character (255) | None |
| Template Long Description | MI_TM000000_LNG_DSC_T | Text | None |
| Template Type | MI_TM000000_TEMP_TYPE_C | Character (50) | None |
| Template State | MI_TM000000_STATE_C | Character (50) | This column may only contain one of the System Code IDs in the MI_STATUS System Code Table. Refer to the (Picklist) worksheet in the data loader workbook for a list of values that you can enter in this column. |
| Temperature Element Type | MI_TMCA0000_TMP_EL_TP_C | Character (50) | This column may only contain one of the System Code IDs in the MI_CALIBRATION_REFERENCE S System Code Table. Refer to the (Picklist) worksheet in the data loader workbook for a list of values that you can enter in this column. |
| Lock Output Range | MI_TMCA0000_LCK_OUT_RNG_F | Boolean | Enter True or False. |
| Manufacturer | MI_TMCA0000_MFR_C | Character (255) | None |

| Field Caption | Field ID | Data Type (Length) | Comments |
|------------------------|-----------------------------------|--------------------|--|
| Model Number | MI_TMCA0000_MOD_NO_C | Character (255) | None |
| Serial Number | MI_TMCA0000_SN_C | Character (255) | None |
| Refresh Equipment Data | MI_TMCA0000_REF_EQ_DA_F | Boolean | Enter True or False. |
| Max Error Limit | MI_TMCA0000_ERR_LIM_N | Numeric | None |
| Tag Description | MI_TMCA0000_TAG_DESCR_C | Character (255) | None |
| Local ID | MI_TMCA0000_LOCAL_ID_N | Numeric | None |
| Repeat Count | MI_TMCA0000_REP_COUNT_N | Numeric | None |
| Reset Set Point | MI_TMCA0000_RESET_SET_POI NT_N | Numeric | None |
| Ramp Time | MI_TMCA0000_RAMP_TIME_N | Numeric | None |
| Error Assessment | MI_TMCA0000_ERR_ASSES_C | Character (50) | A value is required. This column may only contain one of the System Code IDs in the CALIBRATION_ERROR_ASSESSMENT System Code Table. Refer to the (Picklist) worksheet in the data loader workbook for a list of values that you can enter in this column. |

Multi Component Template Worksheet

The Multi Component Template worksheet stores the details of Calibration Template, Multi-Component Analyzer records.

| Field Caption | Field ID | Data Type (Length) | Comments |
|------------------|-----------------------|--------------------|--|
| BATCH_ID | BATCH_ID | Numeric | A value is required and must match one of the values that you enter in the Batch worksheet. Additionally, all the records that are linked to one another must contain the same batch number. |
| Template ID | MI_TM000000_ID | Character (255) | A value is required. |
| Calibration Type | MI_TMCA0000_CAL_TYP_C | Character (50) | A value is required. |

| Field Caption | Field ID | Data Type (Length) | Comments |
|---------------------------------|---------------------------|--------------------|--|
| Asset ID | ASSET_ID | | A value is required. Enter the Asset ID that corresponds to the Asset ID configured in Asset ID Configuration for Equipment, Functional Location, or custom asset that is linked to the Calibration Template. If the value that you enter does not match the Asset ID of any Equipment, Functional Location, or custom asset in the GE Digital APM database, an error message appears, stating that the Asset is not found, and the batch is not imported. |
| Asset Family ID | ASSET_FAMILY_ID | Numeric | A value is required. |
| Profile ID | MI_CAL_PROF_PROF_ID_CHR | Character (255) | A value is required and must be unique. This value identifies the Calibration Profile. Note: The Profile ID will create a relationship between this Applied Template and the Profile. |
| Template Short Description | MI_TM000000_SHRT_DSC_C | Character (255) | None |
| Enterprise <number> Code | MI_TM000000_ERP_01_CD_C | Character (50) | None |
| Enterprise <number> Description | MI_TM000000_ERP_01_DESC_C | Character (255) | None |
| Template Type | MI_TM000000_TEMP_TYPE_C | Character (50) | None |
| Template Long Description | MI_TM000000_LNG_DSC_T | Text | None |
| Template State | MI_TM000000_STATE_C | Character (50) | This column may only contain one of the System Code IDs in the MI_STATUS System Code Table. Refer to the (Picklist) worksheet in the data loader workbook for a list of values that you can enter in this column. |

| Field Caption | Field ID | Data Type (Length) | Comments |
|--------------------------|-------------------------------|--------------------|--|
| Temperature Element Type | MI_TMCA0000_TMP_EL_TP_C | Character (50) | This column may only contain one of the System Code IDs in the MI_CALIBRATION_REFERENCE S System Code Table. Refer to the (Picklist) worksheet in the data loader workbook for a list of values that you can enter in this column. |
| Lock Output Range | MI_TMCA0000_LCK_OUT_RNG_F | Boolean | Enter True or False. |
| Input Type | MI_TMCA0000_INPUT_TYP_C | Character (50) | This column may only contain one of the System Code IDs in the MI_CALIBRATION_IO_TYPES System Code Table. Refer to the (Picklist) worksheet in the data loader workbook for a list of values that you can enter in this column. |
| Manufacturer | MI_TMCA0000_MFR_C | Character (255) | None |
| Model Number | MI_TMCA0000_MOD_NO_C | Character (255) | None |
| Max Error Limit | MI_TMCA0000_ERR_LIM_N | Numeric | None |
| Serial Number | MI_TMCA0000_SN_C | Character (255) | None |
| Refresh Equipment Data | MI_TMCA0000_REF_EQ_DA_F | Boolean | Enter True or False. |
| Tag Description | MI_TMCA0000_TAG_DESCR_C | Character (255) | None |
| Local ID | MI_TMCA0000_LOCAL_ID_N | Numeric | None |
| Repeat Count | MI_TMCA0000_REP_COUNT_N | Numeric | None |
| Reset Set Point | MI_TMCA0000_RESET_SET_POINT_N | Numeric | None |
| Ramp Time | MI_TMCA0000_RAMP_TIME_N | Numeric | None |

Single Comp Temp Detail Worksheet

The Single Comp Temp Detail worksheet is used to define Calibration Template Detail, Analyzer records for a Calibration Template, Single Component Analyzer record.

| Field Caption | Field ID | Data Type (Length) | Comments |
|---|--------------------------|--------------------|--|
| BATCH_ID | BATCH_ID | Numeric | A value is required and must match one of the values that you enter in the Batch worksheet. Additionally, all the records that are linked to one another must contain the same batch number. |
| Template Parent ID | PARENT_ID | Character (255) | A value is required and must match the ID of a Calibration Template, Single Component Analyzer. Otherwise, all the rows in the batch are skipped. |
| Calibration Template Detail ID | MI_TD000000_ID | Character (100) | If you do not enter a value in this column, after you import data, the corresponding field is populated with a system-generated value. |
| Component Name | MI_TDCAAN00_CMPNT_NM_C | Character (255) | This column may only contain one of the System Code IDs in the MI CHEMICAL COMPONENTS System Code Table. Refer to the (Picklist) worksheet in the data loader workbook for a list of values that you can enter in this column. |
| Component Value | MI_TDCAAN00_CMPNT_VAL_N | Numeric | None |
| Component Units | MI_TDCAAN00_CMPNT_UOM_C | Character (50) | This column may only contain one of the System Code IDs defined by the STANDARD GAS UOM value in the MI_CALIBRATION_REFERENCE S System Code Table. Refer to the (Picklist) worksheet in the data loader workbook for a list of values that you can enter in this column. |
| Standard Balance Content | MI_TDCAAN00_BLNC_CNTNT_F | Boolean | Enter True or False. |
| Percent of Scale Test Point | MI_TDCAAN00_PCT_SCL_N | Numeric | None |
| Percent of Scale Sequence Number | MI_TDCAAN00_PCT_SQNC_N | Numeric | None |
| Input Up/Dn | MI_TDCAAN00_UP_DN_TP_C | Character (50) | None |
| Calibration Template Detail Description | MI_TD000000_SHRT_DESC_C | Character (255) | None |

Calibration Task Worksheet

The Calibration Task worksheet stores the details of the Calibration Task records.

| Field Caption | Field ID | Data Type (Length) | Comments |
|------------------|--------------------|--------------------|--|
| BATCH_ID | BATCH_ID | Numeric | A value is required and must match one of the values that you enter in the Batch worksheet. Additionally, all the records that are linked to one another must contain the same batch number. |
| Task ID | MI_TASK_ID | Character (255) | A value is required. |
| Asset ID | ASSET_ID | Character (255) | A value is required. Enter the Asset ID that corresponds to the Asset ID configured in the Asset ID Configuration for Equipment, Functional Location, or custom asset field that is linked to the Calibration Template. If the value that you enter does not match the Asset ID of any Equipment, Functional Location, or custom asset in the GE Digital APM database, an error message appears, stating that the Asset is not found, and the batch is not imported. |
| Asset Family ID | ASSET_FAMILY_ID | Numeric | A value is required. If the Asset corresponds to an Equipment record, then enter MI_EQUIP000. If the Asset corresponds to a Functional Location record, then enter MI_FNCLOC00. If the Asset corresponds to any of the custom asset record, then enter family ID of that asset family. |
| Task Assigned To | MI_TASK_ASSGN_TO_C | Character (50) | None |
| Task Description | MI_TASK_DESC_TX | Character | None |

| Field Caption | Field ID | Data Type (Length) | Comments |
|---------------------------|-------------------------------|--------------------|---|
| Task State | MI_TASK_TASK_STATE_CHR | Character (50) | This column may only contain one of the System Code IDs in the CTST System Code Table. Refer to the (Picklist) worksheet in the data loader workbook for a list of values that you can enter in this column. |
| Reoccurring | MI_TASK_REOCC_FLG | Boolean | Enter True or False. |
| Route Number | MI_TASK_ROUTE_NO_C | Character (25) | None |
| Unconstrain Min/Max Dates | MI_TASK_UNCONSTR_MN_MX_DT_FLG | Boolean | Enter True or False. |
| Last Date | MI_TASK_LAST_DATE_DT | Date | Enter a value in the following format: YYYY-MM-DD HH:mm:ss |
| Rejectable | MI_TASK_REJEC_FLG | Boolean | Enter True or False. |
| Modifiable | MI_TASK_MODIF_FLG | Boolean | Enter True or False. |
| Task Type | MI_TASK_TASK_TYPE_CHR | Character (50) | None |
| Min Interval | MI_TASK_MIN_INTER_NBR | Numeric | None |
| Desired Interval | MI_TASK_DESIR_INTER_NBR | Numeric | None |
| Desired Interval UOM | MI_TASK_DESIR_INTER_UOM_C | Character (50) | This column may only contain one of the System Code IDs in the MI_STRATEGY_REFERENCE System Code Table. Refer to the (Picklist) worksheet in the data loader workbook for a list of values that you can enter in this column. |
| Max Interval | MI_TASK_MAX_INTER_NBR | Numeric | None |
| Calibration Template ID | MI_TASKCALB_CALIB_TEMPL_ID_N | Numeric | A value is required and must match the ID of a Calibration Template. If it does not match, the Calibration Task will still be created, but not linked to a Calibration Template. |

Calibration Event Worksheet

The Calibration Event worksheet stores details of the following records:

- Calibration, Analog
- Calibration, Discrete
- Calibration, Analyzer Single Component

- Calibration, Analyzer Multi-Component

| Field Caption | Field ID | Data Type (Length) | Comments |
|-------------------------|---------------------------|--------------------|--|
| BATCH_ID | BATCH_ID | Numeric | A value is required and must match one of the values that you enter in the Batch worksheet. Additionally, all the records that are linked to one another must contain the same batch number. |
| Event ID | MI_EVENT_ID | Character (255) | A value is required. |
| Calibration Strategy | MI_EVCALIBR_STRATEGY_C | Character (20) | A value is required and must match the ID of an existing Calibration Strategy. |
| Calibration Type | MI_EVCALIBR_CALIB_TYP_C | Character (50) | This column may only contain one of the System Code IDs in the MI_CALIBRATION_TYPE System Code Table. Refer to the (Picklist) worksheet in the data loader workbook for a list of values that you can enter in this column. |
| Primary Output LRV | MI_EVCALIBR_PRI_OUT_LRV_N | Numeric | A value is required. |
| Primary Input LRV | MI_EVCALIBR_PRI_IN_LRV_N | Numeric | A value is required. |
| Calibration Error Limit | MI_EVCALIBR_ERR_LIM_N | Numeric | A value is required. |
| Primary Output URV | MI_EVCALIBR_PRI_OUT_URV_N | Numeric | A value is required. |
| Primary Input URV | MI_EVCALIBR_PRI_IN_URV_N | Numeric | A value is required. |
| Asset ID | ASSET_ID | Numeric | A value is required. Enter the Asset ID that corresponds to the Asset ID configured in Asset ID Configuration for Equipment, Functional Location, or custom asset that is linked to the Calibration Template. If the value that you enter does not match the Asset ID of any Equipment, Functional Location, or custom asset in the GE Digital APM database, an error message appears, stating that the Asset is not found, and the batch is not imported. |

| Field Caption | Field ID | Data Type (Length) | Comments | | | | | | | | | | |
|---------------------------|----------------------------|--------------------|--|------------------|-------------------|-----------|-------------|----------------------|----------------------------|---------------------------|----------------------------|--------------------------|--------------------------|
| Event Family ID | Family_ID | Character | <p>A value is required. Depending on the calibration type, this column must contain one of the following values:</p> <table border="1"> <thead> <tr> <th>Calibration Type</th> <th>Value</th> </tr> </thead> <tbody> <tr> <td>Analog</td> <td>MI_EVCAANLG</td> </tr> <tr> <td>Discrete</td> <td>MI_EVCADSCT</td> </tr> <tr> <td>Single Component Analyzer</td> <td>MI_EVCAANSC</td> </tr> <tr> <td>Multi-Component Analyzer</td> <td>MI_EVCAANM C</td> </tr> </tbody> </table> | Calibration Type | Value | Analog | MI_EVCAANLG | Discrete | MI_EVCADSCT | Single Component Analyzer | MI_EVCAANSC | Multi-Component Analyzer | MI_EVCAANM C |
| Calibration Type | Value | | | | | | | | | | | | |
| Analog | MI_EVCAANLG | | | | | | | | | | | | |
| Discrete | MI_EVCADSCT | | | | | | | | | | | | |
| Single Component Analyzer | MI_EVCAANSC | | | | | | | | | | | | |
| Multi-Component Analyzer | MI_EVCAANM C | | | | | | | | | | | | |
| Primary Output Units | MI_EVCALIBR_PRI_OUT_UOM_C | Character (10) | <p>A value is required. Depending on the calibration type, this column must contain System Codes from one of the following System Code Tables:</p> <table border="1"> <thead> <tr> <th>Calibration Type</th> <th>System Code Table</th> </tr> </thead> <tbody> <tr> <td>Fluke 74X</td> <td>UOME</td> </tr> <tr> <td>Druck DPI620 (Genii)</td> <td>CALIBRATION_DRUCK_UOM_LIST</td> </tr> <tr> <td>Druck DPI61x</td> <td>CALIBRATION_DRUCK_UOM_LIST</td> </tr> <tr> <td>CMX</td> <td>CALIBRATION_CMX_UOM_LIST</td> </tr> </tbody> </table> | Calibration Type | System Code Table | Fluke 74X | UOME | Druck DPI620 (Genii) | CALIBRATION_DRUCK_UOM_LIST | Druck DPI61x | CALIBRATION_DRUCK_UOM_LIST | CMX | CALIBRATION_CMX_UOM_LIST |
| Calibration Type | System Code Table | | | | | | | | | | | | |
| Fluke 74X | UOME | | | | | | | | | | | | |
| Druck DPI620 (Genii) | CALIBRATION_DRUCK_UOM_LIST | | | | | | | | | | | | |
| Druck DPI61x | CALIBRATION_DRUCK_UOM_LIST | | | | | | | | | | | | |
| CMX | CALIBRATION_CMX_UOM_LIST | | | | | | | | | | | | |

| Field Caption | Field ID | Data Type (Length) | Comments | | | | | | | | | | |
|----------------------------|-----------------------------|--------------------|---|------------------|-------------------|-----------|------|----------------------|----------------------------|--------------|----------------------------|-----|--------------------------|
| Primary Input Range Units | MI_EVCALIBR_PRI_IN_RV_UOM_C | Character (10) | <p>A value is required. Depending on the calibration type, this column must contain a value from one of the following System Code Tables:</p> <table border="1"> <thead> <tr> <th>Calibration Type</th> <th>System Code Table</th> </tr> </thead> <tbody> <tr> <td>Fluke 74X</td> <td>UOME</td> </tr> <tr> <td>Druck DPI620 (Genii)</td> <td>CALIBRATION_DRUCK_UOM_LIST</td> </tr> <tr> <td>Druck DPI61x</td> <td>CALIBRATION_DRUCK_UOM_LIST</td> </tr> <tr> <td>CMX</td> <td>CALIBRATION_CMX_UOM_LIST</td> </tr> </tbody> </table> | Calibration Type | System Code Table | Fluke 74X | UOME | Druck DPI620 (Genii) | CALIBRATION_DRUCK_UOM_LIST | Druck DPI61x | CALIBRATION_DRUCK_UOM_LIST | CMX | CALIBRATION_CMX_UOM_LIST |
| Calibration Type | System Code Table | | | | | | | | | | | | |
| Fluke 74X | UOME | | | | | | | | | | | | |
| Druck DPI620 (Genii) | CALIBRATION_DRUCK_UOM_LIST | | | | | | | | | | | | |
| Druck DPI61x | CALIBRATION_DRUCK_UOM_LIST | | | | | | | | | | | | |
| CMX | CALIBRATION_CMX_UOM_LIST | | | | | | | | | | | | |
| Event Start Date | MI_EVENT_STRT_DT | Date | A value is required. Enter a value in the following format: YYYY-MM-DD HH:mm:ss | | | | | | | | | | |
| Calibration Template Key | MI_EVCALIBR_CAL_TMP_KEY_N | Numeric | A value is required. This column may only contain a value that exists in the list in the Template ID field for Calibration Templates. | | | | | | | | | | |
| Asset Family ID | ASSET_FAMILY_ID | Numeric | A value is required. If the Asset corresponds to an Equipment record, then enter MI_EQUIP000. If the Asset corresponds to a Functional Location record, then enter MI_FNCLOC00. If the Asset corresponds to any of the custom asset record, then enter family ID of that asset family. | | | | | | | | | | |
| Input Characteristic Curve | MI_EVCALIBR_IN_CC_CURV_C | Character (25) | This column may only contain one of the System Code IDs in the MI CHARACTERISTIC CURVE System Code Table. Refer to the (Picklist) worksheet in the data loader workbook for a list of values that you can enter in this column. | | | | | | | | | | |

| Field Caption | Field ID | Data Type (Length) | Comments |
|-------------------------------|------------------------------|--------------------|---|
| Calibration Closed | MI_EVCALIBR_CAL_CLOSE_L | Boolean | Enter True or False. |
| Location ID | MI_EVENT_LOC_ID_CHR | Character (255) | None |
| Equipment Manufacturer | MI_EVCALIBR_ASST_MFG_C | Character (255) | None |
| Equipment Model Number | MI_EVCALIBR_ASST_MOD_NO_C | Character (255) | None |
| Equipment Serial Number | MI_EVCALIBR_ASST_SN_C | Character (255) | None |
| Maintenance Type | MI_EVCALIBR_MAINT_TYPE_C | Character (25) | This column may only contain one of the System Code IDs in the MI_MAINTENANCE_TYPE System Code Table. Refer to the (Picklist) worksheet in the data loader workbook for a list of values that you can enter in this column. |
| WO Reference (Event) | MI_EVCALIBR_WO_NO_C | Character (30) | None |
| Scheduled Calibration Date | MI_EVCALIBR_SCHED_CAL_D | Date | Enter a value in the following format: YYYY-MM-DD HH:mm:ss |
| Calibration Technician | MI_EVCALIBR_TECH_NM_C | Character (35) | None |
| Calibration Approval By | MI_EVCALIBR_CAL_APPR_NM_C | Character (50) | None |
| Secondary Output LRV | MI_EVCALIBR_SEC_OUT_LRV_N | Numeric | None |
| Secondary Output Units | MI_EVCALIBR_SEC_OUT_UOM_C | Character (10) | None |
| Secondary Output URV | MI_EVCALIBR_SEC_OUT_URV_N | Numeric | None |
| Test Equipment ID No 1 | MI_EVCALIBR_TST_EQU_ID_01_C | Character (255) | The value in this column must match the ID of a Test Equipment. |
| Test Equipment ID No 2 | MI_EVCALIBR_TST_EQU_ID_02_C | Character (255) | The value in this column must match the ID of a Test Equipment. |
| Test Equipment ID No 3 | MI_EVCALIBR_TST_EQU_ID_03_C | Character (255) | The value in this column must match the ID of a Test Equipment. |
| Test Equipment Manufacturer 1 | MI_EVCALIBR_TST_EQU_MFR_01_C | Character (50) | None |
| Test Equipment Manufacturer 2 | MI_EVCALIBR_TST_EQU_MFR_02_C | Character (50) | None |

| Field Caption | Field ID | Data Type (Length) | Comments |
|--------------------------------|---------------------------------|--------------------|--|
| Test Equipment Manufacturer 3 | MI_EVCALIBR_TST_EQU_MFR_03_C | Character (50) | None |
| Test Equipment Model Number 1 | MI_EVCALIBR_TST_EQU_MDL_01_C | Character (50) | None |
| Test Equipment Model Number 2 | MI_EVCALIBR_TST_EQU_MDL_02_C | Character (50) | None |
| Test Equipment Model Number 3 | MI_EVCALIBR_TST_EQU_MDL_03_C | Character (50) | None |
| Test Equipment Serial Number 1 | MI_EVCALIBR_TST_EQU_SN_01_C | Character (50) | None |
| Test Equipment Serial Number 2 | MI_EVCALIBR_TST_EQU_SN_02_C | Character (50) | None |
| Test Equipment Serial Number 3 | MI_EVCALIBR_TST_EQU_SN_03_C | Character (50) | None |
| Test Equipment Cal. Expire 1 | MI_EVCALIBR_TST_EQ_CAL_EX_1_D | Date | Enter a value in the following format: YYYY-MM-DD HH:mm:ss |
| Test Equipment Cal. Expire 2 | MI_EVCALIBR_TST_EQ_CAL_EX_2_D | Date | Enter a value in the following format: YYYY-MM-DD HH:mm:ss |
| Test Equipment Cal. Expire 3 | MI_EVCALIBR_TST_EQ_CAL_EX_3_D | Date | Enter a value in the following format: YYYY-MM-DD HH:mm:ss |
| Test Equipment Last Cal. 1 | MI_EVCALIBR_TST_EQ_LS_CAL_1_D | Date | Enter a value in the following format: YYYY-MM-DD HH:mm:ss |
| Test Equipment Last Cal. 2 | MI_EVCALIBR_TST_EQ_LS_CAL_2_D | Date | Enter a value in the following format: YYYY-MM-DD HH:mm:ss |
| Test Equipment Last Cal. 3 | MI_EVCALIBR_TST_EQ_LS_CAL_3_D | Date | Enter a value in the following format: YYYY-MM-DD HH:mm:ss |
| Location Short Description | MI_EVENT_LOC_SHRT_DESC_C HR | Character (255) | None |
| Asset Type | MI_EVENT_ASST_TYP_CHR | Character (50) | None |
| Asset Short Description | MI_EVENT_ASST_DESC_CHR | Character (255) | None |
| Asset Category | MI_EVENT_ASST_CTGRY_CHR | Character (50) | None |
| Secondary Input LRV | MI_EVCALIBR_SEC_IN_LRV_N | Numeric | None |
| Secondary Input Range Units | MI_EVCALIBR_SEC_IN_RV_UO M_C | Character (10) | None |

| Field Caption | Field ID | Data Type (Length) | Comments |
|-----------------------------|-------------------------------|--------------------|---|
| Secondary Input URV | MI_EVCALIBR_SEC_IN_URV_N | Numeric | None |
| Event End Date | MI_EVENT_END_DT | Date | Enter a value in the following format: YYYY-MM-DD HH:mm:ss |
| Event Long Description | MI_EVENT_LNG_DSC_TX | Character | None |
| Actual Work Time | MI_EVENT_ACTUAL_WRK_TM_N | Numeric | None |
| Off Line Duration | MI_EVCALIBR_OFF_LINE_DURA_N | Numeric | None |
| Calibration Task ID | MI_EVCALIBR_CAL_TSK_ID_C | Character (50) | This column may contain a value that exists in the list in the Task ID field for Calibration Task records. If the value that you enter does not match the Task ID of any Calibration Task in the GE Digital APM database, then this field is blank after you import data. |
| Test Equipment Status 1 | MI_EVCALIBR_TST_EQU_STAT_01_C | Character (50) | None |
| Test Equipment Status 2 | MI_EVCALIBR_TST_EQU_STAT_02_C | Character (50) | None |
| Test Equipment Status 3 | MI_EVCALIBR_TST_EQU_STAT_03_C | Character (50) | None |
| Output Characteristic Curve | MI_EVCALIBR_OUT_CC_CURV_C | Character (25) | This column may only contain one of the System Code IDs in the MI CHARACTERISTIC CURVE System Code Table. Refer to the (Picklist) worksheet in the data loader workbook for a list of values that you can enter in this column. |

Calibration Result Worksheet

The Calibration Result worksheet stores details of the following records:

- Calibration Results, Analog
- Calibration Result, Discrete
- Calibration Results, Analyzer

| Field Caption | Field ID | Data Type (Length) | Comments |
|---------------------------------|--------------------------|--------------------|---|
| BATCH_ID | BATCH_ID | Numeric | A value is required and must match one of the values that you enter in the Batch worksheet. Additionally, all the records that are linked to one another must contain the same batch number. |
| As Found Error | MI_CALRESLT_AFE_N | Numeric | A value is required. |
| Input Measure AF | MI_CALRESLT_IN_MEAS_AF_N | Numeric | A value is required. |
| Primary Output AF | MI_CALRESLT_PRI_OUT_AF_N | Numeric | A value is required. |
| Calibration Sequence Number | MI_CALRESLT_TST_SEQ_N | Number | A value is required. |
| Standard Name | MI_CRANZR00_CMPNT_NM_C | Character (255) | A value is required for multi-component analyzer calibration. This column may only contain one of the System Code IDs in the MI_CHEMICAL_COMPONENTS System Code Table. Refer to the (Picklist) worksheet in the data loader workbook for a list of values that you can enter in this column. |
| Event ID | MI_CALRESLT_ID | Character (255) | A value is required. Enter the ID of one of the following records: <ul style="list-style-type: none"> • Calibration Results, Analog • Calibration Result, Discrete • Calibration Results, Analyzer |
| Percent of Scale TP | MI_CALRESLT_POS_TP_N | Numeric | A value is required. |
| Input Up/Dn | MI_CALRESLT_UP_DN_TP_C | Character (2) | A value is required. Refer to the (Picklist) worksheet in the data loader workbook for a list of values that you can enter in this column. |
| Switch Number (Discrete) | MI_CRDS0000_SW_N | Numeric | A value is required for discrete calibration. |
| As Found Reset Point (Discrete) | MI_CRDS0000_AF_RSET_N | Numeric | A value is required for discrete calibration. |

| Field Caption | Field ID | Data Type (Length) | Comments | | | | | | | | |
|-------------------------------|--------------------------|--------------------|---|----------------------------|----|-----------------------------|-------------|------------------------------|-------------|-------------------------------|-------------|
| As Found Trip Point | MI_CRDS0000_AF_TP_N | Numeric | A value is required for discrete calibration. | | | | | | | | |
| As Found Dead Band | MI_CRDS0000_AF_DB_N | Numeric | A value is required for discrete calibration. | | | | | | | | |
| As Left Reset Point | MI_CRDS0000_AL_RSET_N | Numeric | A value is required for discrete calibration. | | | | | | | | |
| As Left Trip Point | MI_CRDS0000_AL_TP_N | Numeric | A value is required for discrete calibration. | | | | | | | | |
| As Left Dead Band | MI_CRDS0000_AL_DB_N | Numeric | A value is required for discrete calibration. | | | | | | | | |
| Standard Value | MI_CRANZR00_CMPNT_VAL_N | Numeric | A value is required for single component and multi-component analyzer calibrations. | | | | | | | | |
| Calibration Results Family ID | Family_ID | Character (255) | <p>A value is required. Depending on the family of the Calibration Results record, enter one of the following IDs:</p> <table border="1"> <thead> <tr> <th>Calibration Results Family</th> <th>ID</th> </tr> </thead> <tbody> <tr> <td>Calibration Results, Analog</td> <td>MI_CRAN0000</td> </tr> <tr> <td>Calibration Result, Discrete</td> <td>MI_CRDS0000</td> </tr> <tr> <td>Calibration Results, Analyzer</td> <td>MI_CRANZR00</td> </tr> </tbody> </table> | Calibration Results Family | ID | Calibration Results, Analog | MI_CRAN0000 | Calibration Result, Discrete | MI_CRDS0000 | Calibration Results, Analyzer | MI_CRANZR00 |
| Calibration Results Family | ID | | | | | | | | | | |
| Calibration Results, Analog | MI_CRAN0000 | | | | | | | | | | |
| Calibration Result, Discrete | MI_CRDS0000 | | | | | | | | | | |
| Calibration Results, Analyzer | MI_CRANZR00 | | | | | | | | | | |
| As Found Value | MI_CRANZR00_AF_VAL_N | Numeric | A value is required for multi-component analyzer calibrations. | | | | | | | | |
| Primary Output AL | MI_CALRESLT_PRI_OUT_AL_N | Numeric | None | | | | | | | | |
| Input Measure AL | MI_CALRESLT_IN_MEAS_AL_N | Numeric | None | | | | | | | | |

| Field Caption | Field ID | Data Type (Length) | Comments |
|------------------------------------|------------------------|--------------------|--|
| Parent Key(Single/Multi Component) | MI_CRANZR00_PARE_KEY_N | Numeric | A value is required for single component or multi-component analyzer calibrations. This column may only contain a value that exists in the list in the Event ID field for Calibration, Single Component Analyzer or Calibration, Multi-Component Analyzer records. |
| Parent Key (Analog) | MI_CRAN0000_PARE_KEY_N | Numeric | A value is required for analog calibrations. This column may only contain a value that exists in the list in the Event ID field for Calibration, Analog records. |
| Parent Key (Discrete) | MI_CRDS0000_PARE_KEY_N | Numeric | A value is required for discrete calibrations. This column may only contain a value that exists in the list in the Event ID field for Calibration, Discrete records. |

Calibration Recommendation Worksheet

The Calibration Recommendation worksheet stores details of the Calibration Recommendation records.

| Field Caption | Field ID | Data Type (Length) | Comments |
|------------------------|----------------------------|--------------------|--|
| BATCH_ID | BATCH_ID | Numeric | A value is required and must match one of the values that you enter in the Batch worksheet. Additionally, all the records that are linked to one another must contain the same batch number. |
| Target Completion Date | MI_REC_TARGE_COMPL_DATE_DT | Date | A value is required. Enter a value in the following format: YYYY-MM-DD HH:mm:ss |
| Recommendation ID | MI_REC_ID | Character (255) | A value is required and must be unique. This value identifies the Recommendation. |

| Field Caption | Field ID | Data Type (Length) | Comments |
|-------------------------------------|------------------------------------|--------------------|--|
| Asset ID | ASSET_ID | Numeric | A value is required. Enter the Asset ID that corresponds to the Asset ID configured in Asset ID Configuration for Equipment, Functional Location, or custom asset that is linked to the Calibration Template. If the value that you enter does not match the Asset ID of any Equipment, Functional Location, or custom asset in the GE Digital APM database, an error message appears, stating that the Asset is not found, and the batch is not imported. |
| Calibration Type | MI_RECCLBN_CALEVNT_CAT_C HR | Character (100) | A value is required. |
| Event ID | Event ID | Character | None |
| Asset Family ID | ASSET_FAMILY_ID | Numeric | A value is required. If the Asset corresponds to an Equipment record, then enter MI_EQUIP000. If the Asset corresponds to a Functional Location record, then enter MI_FNCLOC00. If the Asset corresponds to any of the custom asset record, then enter family ID of that asset family. |
| Reevaluate? | MI_REC_REEVAL_FLG | Boolean | Enter True or False. |
| Calibration Recommendation Basis | MI_RECCLBN_CALEVNT_ID_CH R | Character (100) | Enter the Event ID. |
| Reevaluation Notification List | MI_REC_REEVAL_NOTIF_LIST_C HR | Character (2000) | None |
| Days Before Due Date to be Notified | MI_REC_DAYS_BEF_DUE_DT_N OT_NBR | Numeric | None |
| Generate Work Request | MI_REC_WO_INTERFACE_FLAG _F | Boolean | Enter True or False. |
| Meridium Task ID | MI_REC_MERIDIUM_TASK_ID_C | Character (255) | None |
| Final State Lock | MI_REC_FINAL_STATE_LOCK_F | Boolean | Enter True or False. |
| Final Approver Name | MI_REC_FINAL_APPROVE_NA ME_C | Character (255) | None |

| Field Caption | Field ID | Data Type (Length) | Comments |
|-----------------------------------|------------------------------|--------------------|--|
| Required Equipment Status | MI_REC_REQUI_EQUIP_STATU_CHR | Character (50) | This column may only contain one of the System Code IDs in the MI_STATUS System Code Table. Refer to the (Picklist) worksheet in the data loader workbook for a list of values that you can enter in this column. |
| Reevaluation Alert Body Text | MI_REC_REEVAL_EMAIL_TX | Character | None |
| Implementation Alert Text | MI_REC_NOTIF_EMAIL_TEXT_CHR | Character | None |
| Alert Assignee When Due? | MI_REC_NOTIFY_RP_FLG | Boolean | Enter True or False. |
| Reevaluation Date | MI_REC_REEVAL_DT | Date | Enter a value in the following format: YYYY-MM-DD HH:mm:ss |
| Business Impact | MI_REC_IMPAC_CHR | Character (100) | This column may only contain one of the System Code IDs in the MI_BUSINESS_IMPACT System Code Table. Refer to the (Picklist) worksheet in the data loader workbook for a list of values that you can enter in this column. |
| Frequency of Alert After Due Date | MI_REC_NOTIF_AFTER_DD_CHR | Character (50) | This column may only contain one of the System Code IDs in the MI_FREQ_OF_ALERTS System Code Table. Refer to the (Picklist) worksheet in the data loader workbook for a list of values that you can enter in this column. |
| Completion Comments | MI_REC_CLOSE_COMME_TX | Character | None |
| Implemented Date | MI_REC_COMPL_DATE_DT | Date | Enter the value in the following format: YYYY-MM-DD HH:mm:ss |
| Recommendation Headline | MI_REC_SHORT_DESCR_CHR | Character (255) | None |
| Recommendation Description | MI_REC_LONG_DESCR_TX | Character | None |
| Recommendation Priority | MI_REC_PRIORITY_C | Character (50) | None |
| Author Lock | MI_REC_AUTHOR_LOCK_F | Boolean | Enter True or False. |
| Assigned To Name | MI_REC_ASSIG_NM_CHR | Character (255) | None |

| Field Caption | Field ID | Data Type (Length) | Comments |
|----------------------------------|-----------------------------|--------------------|--|
| Mandatory Date | MI_REC_MANDA_DATE_DT | Date | Enter a value in the following format: YYYY-MM-DD HH:mm:ss |
| Create SAP Notification? | MI_REC_CREATE_SAP_NOTIF_FLG | Boolean | Enter True or False. |
| Work Request Reference | MI_REC_WK_REQ_REF_CHR | Character (50) | None |
| Work Request Equipment | MI_REC_WR_EQUIP_C | Character (255) | None |
| Work Request Functional Location | MI_REC_WR_LOC_C | Character (255) | None |
| Technical Number | MI_REC_TECHNICAL_NUM_C | Character (50) | None |
| Status | MI_REC_STATU_CHR | Character (255) | None |
| Recommendation Type | MI_REC_TYPE_CHR | Character (255) | None |
| Reviewer Name | MI_REC_REVIEW_NM_CHR | Character (255) | None |
| Author Name | MI_REC_AUTHO_NM_CHR | Character (255) | None |
| Creation Date | MI_REC_CREAT_DATE_DT | Date | Enter a value in the following format: YYYY-MM-DD HH:mm:ss |
| MI_SM_STATE_ID_C | MI_SM_STATE_ID_C | Character | None |
| MI_SM_STATE_ENTERED_D | MI_SM_STATE_ENTERED_D | Date | Enter a value in the following format: YYYY-MM-DD HH:mm:ss |
| MI_SM_STATE_OWNER_ID_C | MI_SM_STATE_OWNER_ID_C | Character | None |

About the Calibration Data Loader Load Verification

About This Task

Following a successful data load, the user is able to navigate to any of the imported templates, to view the details and logic tree associated with the template, and to import template content into an analysis.

Procedure

1. Access the details of the import job. These details indicate if any errors were encountered during the data load. The log may help account for any records that are not loaded.
2. In Calibration Management or Record Manager, access the assets specified in the data loader workbook, and then verify that the expected Calibration records are present or updated, and that any associated records that you expected to be created are also present in the database.
3. To access a list of Calibration Templates created after a specific date, run the following query: `SELECT [MI_TMCA0000].[MI_TM000000_ID] "Template ID", [MI_TMCA0000].[MI_TMCA0000_CAL_TYP_C] "Calibration Type", [MI_TMCA0000].[MI_TMCA0000_INPUT_TYP_C] "Input Type", [MI_TMCA0000].[MI_TMCA0000_OUTPU_TYP_C] "Output Type", [MI_TMCA0000].[MI_TMCA0000_IS_MAST_TEMP_L] "Is Master Template",`

```
[MI_TMCA0000].LAST_UPDT_DT "Created Date"FROM [MI_TMCA0000] WHERE  
[MI_TMCA0000].LAST_UPDT_DT >= (? :d :caption='Enter Date')
```

4. To access a list of Calibration Tasks created after a specific date, run the following query:

```
SELECT  
[MI_TASKCALB].[MI_TASK_ID] "Task ID", [MI_TASKCALB].  
[MI_TASK_LAST_DATE_DT] "Last Date", [MI_TASKCALB].  
[MI_TASK_NEXT_DATE_DT] "Next Date", [MI_TASKCALB].  
[MI_TASK_DESIR_INTER_NBR] "Desired Interval", [MI_TASKCALB].  
[MI_TASK_DESIR_INTER_UOM_C] "Desired Interval UOM",  
[MI_TASKCALB].LAST_UPDT_DT "Created Date" FROM [MI_TASKCALB] WHERE  
[MI_TASKCALB].LAST_UPDT_DT >= (? :d :caption='Enter Date')
```
5. To access a list of Calibrations created after a specific date, run the following query:

```
SELECT  
[MI_EVCALIBR].[MI_EVENT_ID] "Event ID", [MI_EVCALIBR].  
[MI_EVCALIBR_CALIB_TYP_C] "Calibration Type", [MI_EVCALIBR].  
[MI_EVCALIBR_STRATEGY_C] "Calibration Strategy", [MI_EVCALIBR].  
[MI_EVCALIBR_CAL_CLOSE_L] "Calibration Closed", [MI_EVCALIBR].  
[MI_SM_STATE_ID_C] "Calibration State", [MI_EVCALIBR].LAST_UPDT_DT  
"Created Date"FROM [MI_EVCALIBR] WHERE [MI_EVCALIBR].LAST_UPDT_DT >=  
(? :d :caption='Enter Date')
```

Chapter 12

Deployment and Upgrade

Topics:

- [Deployment](#)
- [Upgrade](#)

Deployment

Deployment

Refer to the deployment information here [Deploy Calibration Management for the First Time](#).

Upgrade

Upgrade

Refer to the upgrade information here [Upgrade or Update Calibration Management to V5.1.0.0.0](#).

Chapter 13

Reference

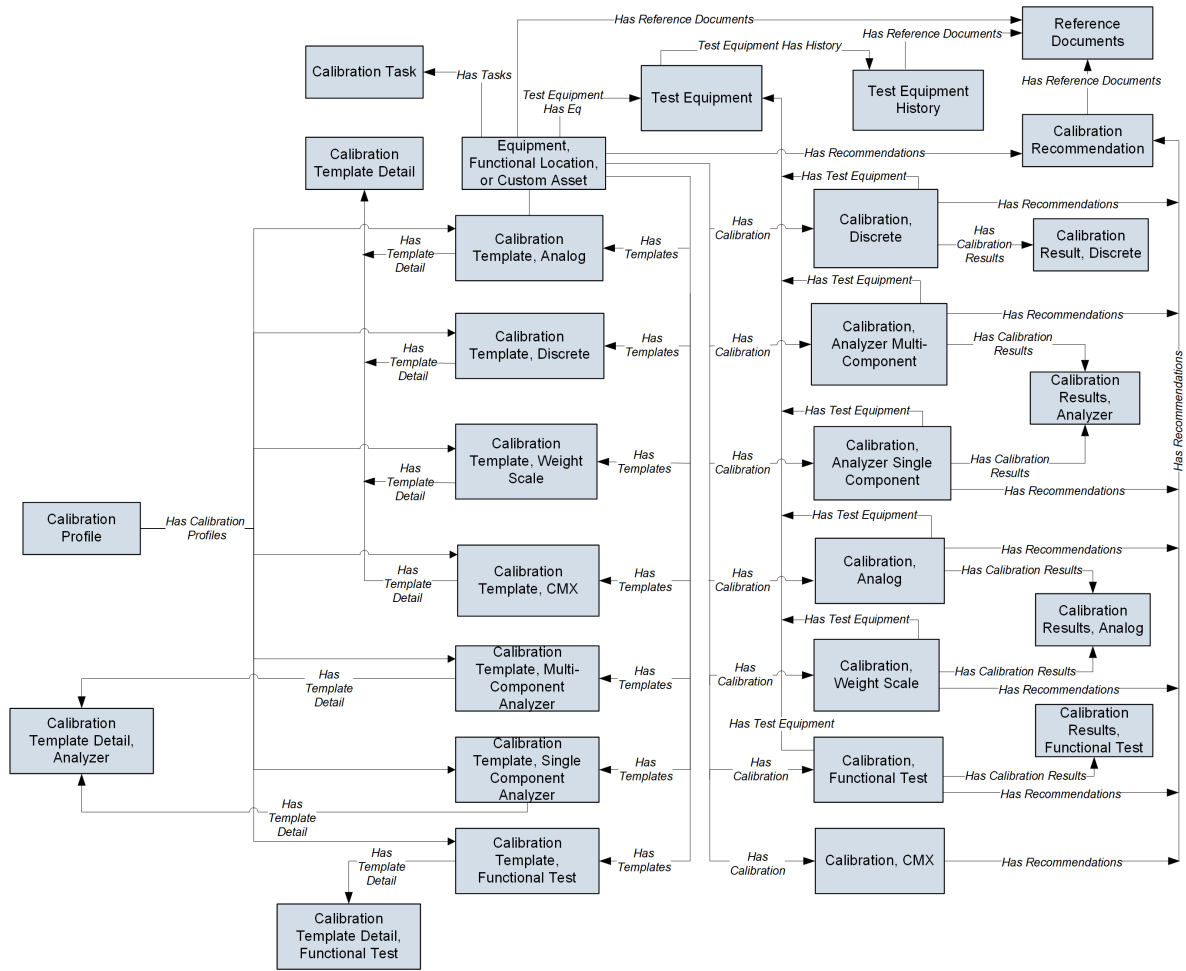
Topics:

- [General Reference](#)
- [Family Field Descriptions](#)
- [Catalog Items](#)
- [Calibration Reports](#)

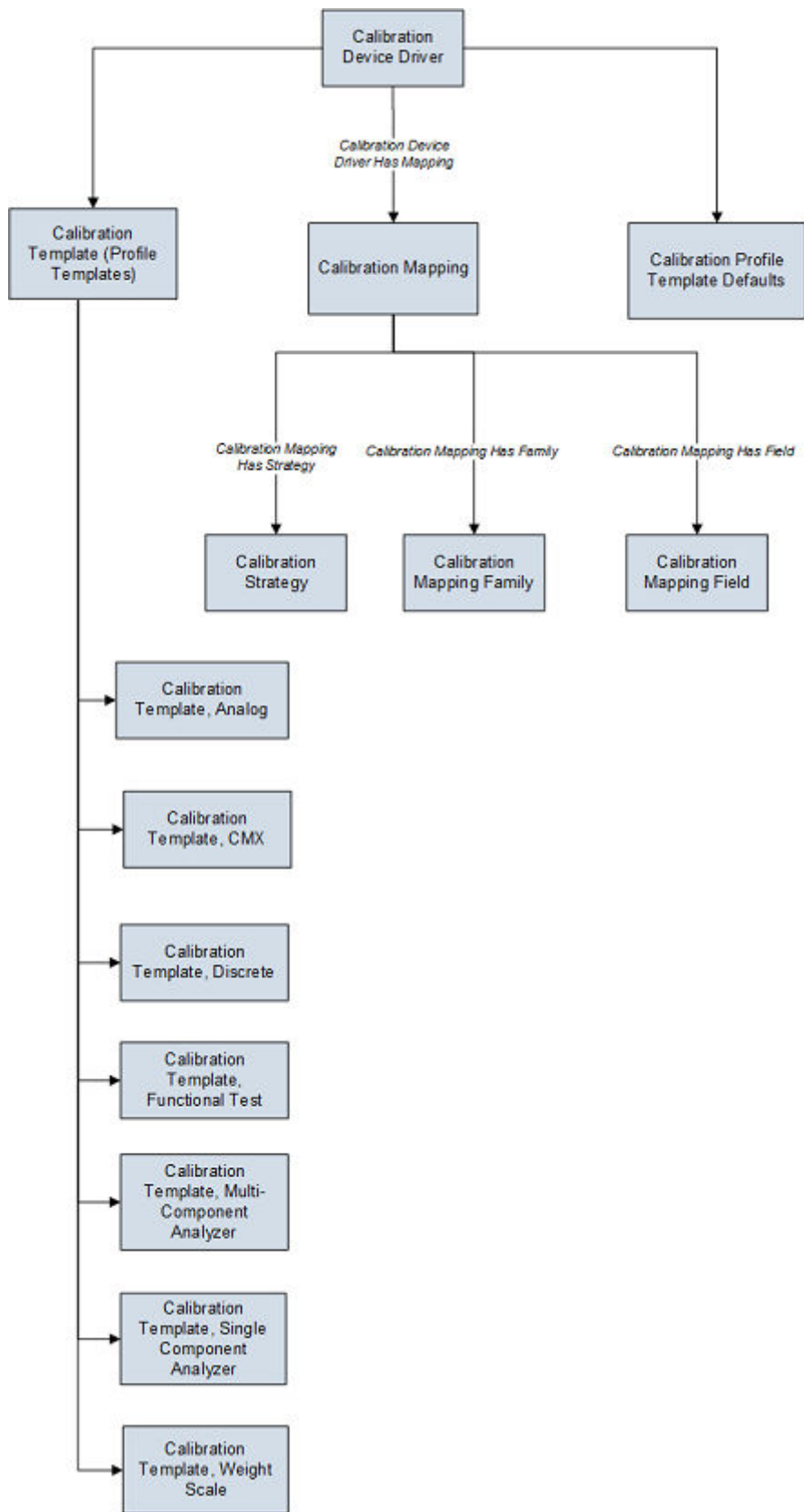
General Reference

Calibration Management Data Model

The following diagram shows how the families used in Calibration Management are related to one another.



The following diagram shows how the families used in device mapping in Calibration Management are related to one another.



Note: In the diagram, boxes represent entity families and arrows represent relationship families that are configured in the baseline database. You can determine the direction of the each relationship definition from the direction of the arrow head: the box from which the arrow originates is the predecessor, and the box to which the arrow head points is the successor.

Optional Calibration Management Relationship and Entity Families

In addition to the entity and relationship families that appear in the Calibration Management data model image, the following families that can be used with Calibration Management exist in the baseline GE Digital APM database.

- Standard Gas
- Standard Gas Components
- Has Standard Gas
- Has Components

These families, however, are not linked by default to any of the Calibration Management families shown in the data model, and to simplify the data model image, these families were left out.

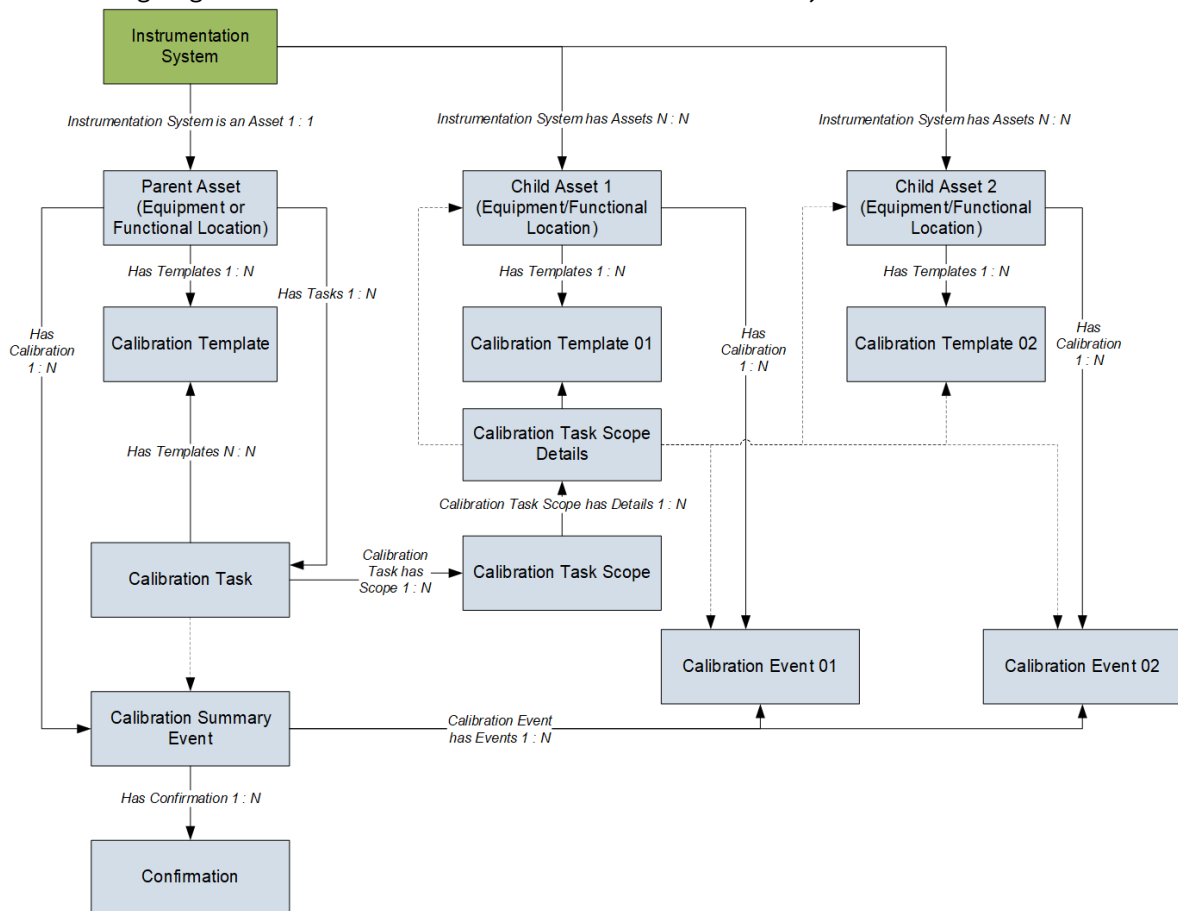
In the baseline GE Digital APM database, the Standard Gas family is related to the Standard Gas Components family through the Has Components relationship family. Standard Gas Cylinder records and Standard Gas Component records store information about gas components that are associated with a piece of equipment or a location. If you want to link Standard Gas Cylinders to Equipment, you can define the relationship using the Has Standard Gas relationship family by creating the following relationship definition:

- **Predecessor:** Equipment, Functional Location, or custom asset
- **Predecessor Cardinality:** Zero or many
- **Successor:** Standard Gas Cylinder
- **Successor Cardinality:** Zero or Many

If you want to link Calibration Tasks to Calibration Templates, you can link the Calibration Task family to the desired Calibration Template families through the Has Template relationship family.

Instrumentation System Data Model

The following diagram shows how the families used in Instrumentation System are related to one another.



Note: In the diagram, boxes represent entity families and arrows represent relationship families that are configured in the baseline database. You can determine the direction of each relationship definition from the direction of the arrowhead: the box from which the arrow originates is the predecessor, and the box to which the arrowhead points is the successor.

Calibration Management Security Groups

The following table lists the baseline Security Groups available for users within this module, as well as the baseline Roles to which those Security Groups are assigned.

Important: Assigning a Security User to a Role grants that user the privileges associated with all of the Security Groups that are assigned to that Role. To avoid granting a Security User unintended privileges, before assigning a Security User to a Role, be sure to review all of the privileges associated with the Security Groups assigned to that Role. Also, be aware that additional Roles, as well as Security Groups assigned to existing Roles, can be added via Security Manager.

| Security Group | Roles |
|------------------------------|--|
| MI Calibration Administrator | MI Calibration Administrator MI Safety Admin |
| MI Calibration User | MI Calibration User MI Safety Admin MI Safety Power MI Safety User |
| MI Calibration Viewer | MI APM Viewer MI Calibration Viewer MI Safety Admin MI Safety Power MI Safety User MI Strategy Admin MI Strategy Power MI Strategy User |

Note: Any Security User who is a member of the MI Calibration Administrator Security Group should also be added to MI Devices Administrators Security Group. Members of the MI Calibration User Security Group should also be added to MI Devices Power Users Security Group. This will allow Calibration users to perform automated calibration.

The baseline family-level privileges that exist for these Security Groups are summarized in the following table.

| Family | MI Calibration Administrator | MI Calibration User | MI Calibration Viewer |
|--|------------------------------|------------------------------|-----------------------|
| Entity Families | | | |
| Alert | View, Update, Insert, Delete | View, Update, Insert, Delete | View |
| Asset Safety Preferences | View, Update, Insert, Delete | View | View |
| Calibration (Event) | View, Update, Insert, Delete | View, Update, Insert, Delete | View |
| Calibration, Analog | View, Update, Insert, Delete | View, Update, Insert, Delete | View |
| Calibration, Analyzer Multi-Component | View, Update, Insert, Delete | View, Update, Insert, Delete | View |
| Calibration, Analyzer Single Component | View, Update, Insert, Delete | View, Update, Insert, Delete | View |
| Calibration, CMX | View, Update, Insert, Delete | View, Update, Insert, Delete | View |
| Calibration, Discrete | View, Update, Insert, Delete | View, Update, Insert, Delete | View |
| Calibration, Functional Test | View, Update, Insert, Delete | View, Update, Insert, Delete | View |
| Calibration, Summary Event | View, Update, Insert, Delete | View, Insert, Update | View |

| Family | MI Calibration Administrator | MI Calibration User | MI Calibration Viewer |
|---|-------------------------------------|------------------------------|------------------------------|
| Calibration, Weight Scale | View, Update, Insert, Delete | View, Update, Insert, Delete | View |
| Calibration Device Driver | View, Update, Insert, Delete | View | View |
| Calibration Device Mapping | View, Update, Insert, Delete | View | View |
| Calibration Mapping Family | View, Update, Insert, Delete | View | View |
| Calibration Mapping Field | View, Update, Insert, Delete | View | View |
| Calibration Profile | View, Update, Insert, Delete | View | View |
| Calibration Profile Template Defaults | View, Update, Insert, Delete | View | View |
| Calibration Recommendation | View, Update, Insert, Delete | View, Update, Insert | View |
| Calibration Result | View, Update, Insert, Delete | View, Update, Insert, Delete | View |
| Calibration Results, Analog | View, Update, Insert, Delete | View, Update, Insert, Delete | View |
| Calibration Results, Analyzer | View, Update, Insert, Delete | View, Update, Insert, Delete | View |
| Calibration Result, Discrete | View, Update, Insert, Delete | View, Update, Insert, Delete | View |
| Calibration Results, Functional Test | View, Update, Insert, Delete | View, Update, Insert, Delete | View |
| Calibration Setup Defaults | View, Update, Insert, Delete | View | View |
| Calibration Strategy | View, Update, Insert, Delete | View | View |
| Calibration Task | View, Update, Insert, Delete | View | View |
| Calibration Task Revision | View, Update, Insert, Delete | View | View |
| Calibration Task Scope | View, Update, Insert, Delete | View | View |
| Calibration Task Scope Details | View, Update, Insert, Delete | View, Insert, Update | View |
| Calibration Template | View, Update, Insert, Delete | View | View |
| Calibration Template, Analog | View, Update, Insert, Delete | View | View |
| Calibration Template, Discrete | View, Update, Insert, Delete | View | View |
| Calibration Template, Weight Scale | View, Update, Insert, Delete | View | View |
| Calibration Template, Single Component Analyzer | View, Update, Insert, Delete | View | View |
| Calibration Template, Multi-Component Analyzer | View, Update, Insert, Delete | View | View |
| Calibration Template, Functional Test | View, Update, Insert, Delete | View | View |
| Calibration Template, CMX | View, Update, Insert, Delete | View | View |
| Calibration Template Defaults | View, Update, Insert, Delete | View, Update, Insert, Delete | View |

| Family | MI Calibration Administrator | MI Calibration User | MI Calibration Viewer |
|---------------------------------------|-------------------------------------|------------------------------|------------------------------|
| Calibration Template Detail | View, Update, Insert, Delete | View | View |
| Calibration Template Detail, Analyzer | View, Update, Insert, Delete | View | View |
| Calibrator | View, Update, Insert, Delete | View | View |
| Equipment | View | View | View |
| Functional Location | View | View | View |
| Instrumentation System | View, Update, Insert, Delete | View | View |
| Reference Document | View, Update, Insert, Delete | View | View |
| SAP System | View | View | View |
| Standard Gas | View, Update, Insert, Delete | View | View |
| Standard Gas Components | View, Update, Insert, Delete | View | View |
| Standard Gas Cylinder | View, Update, Insert, Delete | View | View |
| Task | View, Update, Insert, Delete | View | View |
| Task Types | View, Update, Insert, Delete | View | View |
| Test Equipment | View, Update, Insert, Delete | View | View |
| Test Equipment History | View, Update, Insert, Delete | View | View |
| Work History | View | View | View |
| Work History Detail | View | View | View |
| Relationship Families | | | |
| Calibration Device Driver Has Mapping | View, Update, Insert, Delete | View | View |
| Calibration Event has Events | View, Update, Insert, Delete | View, Update, Insert, Delete | View |
| Calibrator has Device Driver | View, Update, Insert, Delete | View | View |
| Calibration Mapping Has Family | View, Update, Insert, Delete | View | View |
| Calibration Mapping Has Field | View, Update, Insert, Delete | View | View |
| Calibration Mapping Has Strategy | View, Update, Insert, Delete | View | View |
| Calibration Task has Scope | View, Update, Insert, Delete | View | View |
| Calibration Task Scope has Details | View, Update, Insert, Delete | View | View |
| Equipment Has Equipment | View | View | View |
| Functional Location Has Equipment | View | View | View |

| Family | MI Calibration Administrator | MI Calibration User | MI Calibration Viewer |
|--|------------------------------|------------------------------|-----------------------|
| Functional Location Has Functional Location(s) | View | View | View |
| Has Associated Recommendation | View, Update, Insert, Delete | View | View |
| Has Calibration | View, Update, Insert, Delete | View, Update, Insert, Delete | View |
| Has Calibration Profiles | View, Update, Insert, Delete | View | View |
| Has Calibration Results | View, Update, Insert, Delete | View, Update, Insert, Delete | View |
| Has Consolidated Recommendations | View, Update, Insert, Delete | View, Update, Insert, Delete | View |
| Has Driving Recommendations | View, Update, Insert, Delete | View | View |
| Has Event Detail | View | View | View |
| Has Recommendations | View, Update, Insert, Delete | View, Update, Insert, Delete | View |
| Has Reference Documents | View, Update, Insert, Delete | View, Update, Insert, Delete | View |
| Has Standard Gas | View, Update, Insert, Delete | View, Update, Insert, Delete | View |
| Has Standard Gas Components | View, Update, Insert, Delete | View | View |
| Has Standard Gas Details | View, Update, Insert, Delete | View, Update, Insert, Delete | View |
| Has Superseded Recommendations | View, Update, Insert, Delete | View | View |
| Has Task Revision | View, Update, Insert, Delete | View | View |
| Has Tasks | View, Update, Insert, Delete | View, Update, Insert, Delete | View |
| Has Templates | View, Update, Insert, Delete | View, Update, Insert, Delete | View |
| Has Template Detail | View, Update, Insert, Delete | View | View |
| Has Test Equipment | View, Update, Insert, Delete | View, Update, Insert, Delete | View |
| Has Work History | View | View | View |
| Instrumentation System is an Asset | View, Update, Insert, Delete | View | View |
| Instrumentation System has Assets | View, Update, Insert, Delete | View | View |
| Test Equipment Has Equipment | View, Update, Insert, Delete | View, Update, Insert, Delete | View |
| Test Equipment Has History | View, Update, Insert, Delete | View, Update, Insert, Delete | View |

Calibration Management URLs

There is one URL Route associated with Calibration Management: asset-safety/calibration. The following table describes the various paths that build on the route, and the elements that you can specify for each.

Tip: For more information, refer to the URLs section of the documentation.

| Element | Description | Accepted Value(s) | Notes |
|--|--|---|---|
| asset-safety/calibration/calibration-mgmt: Displays the Calibration Management Overview page. | | | |
| asset-safety/calibration/calibration-mgmt/<EntityKey>: Displays the Calibration Management Overview page of an asset. | | | |
| <EntityKey> | Specifies the entity key of the asset whose Calibration Management Overview page you want to access | Any numeric Entity Key that corresponds to an asset. | Opens the Calibration Management Overview page of the asset. Note: On the Calibration Management Overview page of an asset, the graphs do not appear. |
| asset-safety/calibration/<DatasheetType>/<EntityKey>: Displays the datasheet with the specified type and Entity Key. | | | |
| <EntityKey> | Specifies the datasheet that you want to access | 0 | Opens the blank datasheet of the specified type, allowing you to create a new one. |
| | | Any numeric Entity Key that corresponds to an existing datasheet. | Opens the specified datasheet in a new tab. This value is required to access an existing datasheet from a URL. |
| <DatasheetType> | Specifies the type of the datasheet | calibration-task-datasheet | None |
| | | calibration-event-datasheet | |
| | | profile-template-datasheet | |
| | | MI_SGCY0000 | |
| | | MI_TESTEQUIP | |
| calibration/instrumentation-system-overview: Displays the Instrumentation System Overview page. | | | |
| calibration/instrumentation-system/<key>: Displays the Instrumentation System record. The left pane displays the Instrumentation System node with all the child nodes and calibration tasks. The workspace displays the Instrumentation System datasheet and a result grid to display summary events. | | | |
| <key> | Specifies the entity key of the Instrumentation System record that you want to access. | Entity key of the Instrumentation System record | N/A |
| calibration/instrumentation-system/<key>/task/<taskKey>: Displays the Calibration Task and Calibration Task Scope details. | | | |
| <key> | Specifies the entity key of the Instrumentation System record that you want to access. | Entity key of the Instrumentation System record | N/A |
| <taskKey> | Specifies the entity key of the Calibration Task record that you want to access. | Entity key of the Calibration Task record | Displays the Calibration Task record and Calibration Task Scope details. |

| Element | Description | Accepted Value(s) | Notes |
|--|--|--|--|
| calibration/instrumentation-system/<key>/asset/<assetKey> : Displays the Calibration Task and Calibration Task Scope details. | | | |
| <key> | Specifies the entity key of the Instrumentation System record that you want to access. | Entity key of the Instrumentation System record | N/A |
| <assetKey> | Specifies the entity key of the child asset record whose calibration event details you want to access. | Entity key of the child asset. The asset can be a Functional Location or Equipment record. | Displays the Calibration Event records. These records include the calibration events created as part of Instrumentation System as well as outside of Instrumentation System. |
| calibration/instrumentation-system-event/<eventKey> : Displays the selected Calibration Summary Event record in a new tab, and the child events associated with it. | | | |
| <eventKey> | Specifies the entity key of the Calibration Summary Event record. | Entity key of the Calibration, Summary Event record | N/A |

Example: URLs

| Example URL | Destination |
|---|---|
| asset-safety/calibration/calibration-mgmt | The Calibration Management Overview page. |
| /asset-safety/calibration/calibration-mgmt/ 14356783 | The Calibration Management Overview page for the asset whose entity key is 14356783. |
| asset-safety/calibration/ calibration-task-datasheet/14356783 | The datasheet of the Calibration Task whose entity key is 14356783. |
| asset-safety/calibration/ calibration-event-datasheet/14356784 | The datasheet of the Calibration Event whose entity key is 14356784. |
| asset-safety/calibration/ profile-template-datasheet/<template-type>/14356785 Note: <template-type> specifies the type of template you want to access, and it accepts below values for different type of templates: <ul style="list-style-type: none"> • 0 – Open Existing Templates • 1 – Create New Fluke 74X Templates • 2 – Create New Druck DPI620 (Genni) Templates • 3 – Create New Druck DPI61x Templates • 4 – Create New CMX Templates • 5 – Create new Manual Templates | The datasheet of the Calibration Template whose entity key is 14356785. |
| asset-safety/calibration/ MI_TESTEQUIP/14356786 | The datasheet of the Test Equipment whose entity key is 14356786. |
| asset-safety/calibration/ MI_SGCY0000/14356787 | The datasheet of the Standard Gas whose entity key is 14356787. |

Calibration Management System Code Tables

The following table lists the System Code Tables that are used by Calibration Management.

| Table ID | Table Description | Function |
|-----------------------------------|--|--|
| MI CALIBRATION CHECKLIST TYPE | MI Calibration, Check List Type | Populates the Response Type field in a Calibration Template Detail, Functional Test. |
| MI CALIBRATION ERROR ASSESSMENT | MI Calibration Error Assessment | Populates the Error Assessment field in a Calibration Defaults. |
| MI CALIBRATION FUNCTION | MI Calibration, Calibration Function | Populates the Input Up/Down field in a Calibration. |
| MI CALIBRATION IO TYPES | Calibration Input/Output Types | Populates the Primary Input Range Units and Primary Output Range Units fields in a Calibration Template. |
| MI CALIBRATION MODE | MI Calibration, Calibration Mode | Populates the Input Mode and Output Mode fields in a Calibration Template. |
| MI CALIBRATION REFERENCES | MI Calibration, Calibration List of References | Populates the List of References in multiple fields. |
| MI CALIBRATION TEMPERATURE SOURCE | MI Calibration Temperature Source | Populates the Input Ref Temp Source and Output Ref Temp Source fields in a Calibration Template. |
| MI CALIBRATION TYPE | MI Calibration, Calibration Type | Populates the Calibration Type field in a Calibration Template. |
| MI CALIBRATION YES OR NO | MI Calibration, Yes or No | Populates the Response field in a Calibration, Functional Test. |
| MI CHARACTERISTIC CURVE | MI Calibration, Characteristic Curve | Populates the Input Characteristic Curve and Output Characteristic Curve fields in a Calibration (Calibration Event record). |
| MI CHEMICAL COMPONENTS | Calibration, Chemical Components | Populates the Component field in a Standard Gas Component. |
| MI CMX TEMPLATE INPUT METHOD | CMX Standard Template Input Method | Populates the Input Method field in a Calibration Template, CMX record. |
| MI CMX TEMPLATE INPUT TYPE | CMX Template Input Type | Populates the Input Type field in a Calibration Template, CMX record. |
| MI CMX TEMPLATE OUTPUT METHOD | CMX Standard Template Output Method | Populates the Output Method field in a Calibration Template, CMX record. |
| MI CMX TEMPLATE OUTPUT TYPE | CMX Template Output Type | Populates the Output Type field in a Calibration Template, CMX record. |

| Table ID | Table Description | Function |
|-------------------------------------|---|--|
| MI_STATUS | Status Codes - CORE | Populates the Input Damping Setting, Output Damping Setting, and Input Min Max Mode fields in a Calibration Template. |
| MI ERROR BASIS | MI Calibration, Percent Error Basic Calculation | Populates the Percent Error Basis field in a Calibration. |
| MI FLUKE ERROR MODES | MI Calibration, Fluke Error Modes | Populates the Error Configuration field in a Calibration Template. |
| MI GAS CYLINDER CONNECTION NUMBER | MI Calibration, Gas Cylinder Connection Number | Populates the Cylinder Connection Number in a Standard Gas Cylinder. |
| MI GAS CYLINDER SIZE | MI Calibration, Gas Cylinder Size | Populates the Cylinder Size field in a Standard Gas Cylinder. |
| MI GAS CYLINDER TYPE | MI Calibration, Gas Cylinder Type | Populates the Cylinder Type field in a Standard Gas Cylinder. |
| MI MAINTENANCE TYPE | MI Calibration, Maintenance Type | Populates the Maintenance Type field in a Calibration. |
| MI POWER SOURCE | MI Calibration, Power Source | Populates the Loop Power field in a Calibration Template. |
| MI SENSOR TYPE | MI Calibration, Sensor Type | Populates the Temperature Element Type field in a Calibration Template. |
| MI STATUS | Status Codes - CORE | Populates the Template State field in a Calibration Profile Template. |
| MI SWITCH CONTACT STATE | MI Calibration, Switch Contact State | Populates the Contact State fields in a Calibration Template, Discreet record. |
| MI TASK TYPE REFERENCE | CORE, Reference values to limit task type lists when creating tasks | Populates the Task Type field in a Task record. For a Calibration Task, this field is disabled and populated with CALIBRATION. |
| MI TEMPERATURE MEASUREMENT STANDARD | MI Calibration, Temperature Measurement Standard | Populates the Temperature Standard field in a Calibration Template. |
| MI THERMOCOUPLE TYPE | MI Calibration, Thermocouple Type | Populates the Temperature Element Type field in a Calibration Template. |
| MI YES NO | MI Core, Yes-No | Populates the Performs Square Root field in a Calibration Template. |
| MI CALIBRATION RESULT | MI_CALIBRATION_RESULT | Populates the following fields in a Calibration, CMX event: <ul style="list-style-type: none"> • Calibration Passed • Overall AF Pass/Fail • Overall AL Pass/Fail |

| Table ID | Table Description | Function |
|---------------|--------------------|--|
| Template Code | CMX Template codes | Populates the Template Code field in a Calibration Template, CMX record. |
| UOME | Unit of measure | Populates the Unit of Measure list in the Measurement Location records. |

Calibration Unit of Measurements (UOMs) and their Conversions

The following table lists the GE Digital APM UOMs and their respective Fluke Base UOMs with conversion formulas. The formula is used to convert the Input and Output range values before sending data to the calibrator and after receiving data from the calibrator.

Note:

- In the table, x in the conversion formula indicates the input-output range values to be converted.
- For each category, the Device Input UOM and Device Output UOM fields are set to default UOM. You can change it to a different UOM as required within the same category.
- The following UOMs and conversions are applicable to Fluke devices only.
- Since Fluke 754 and Fluke 729 use common System Code Tables, ensure that compatible UOMs are used while creating Calibration Templates to perform automated calibrations.

| Category | ID | Description | Fluke Base UOM | Conversion Formula |
|----------|------------|----------------------|----------------|------------------------|
| Pressure | atm | Standard Atmosphere | bar (Default) | (x) * 1.01325 |
| | atm | Standard Atmosphere | ftH2O | (x) * 33.93244655 |
| | atm | Standard Atmosphere | inH2O 60F | (x) * 407.1893586 |
| | atm | Standard Atmosphere | inH2O | (x) * 406.782504600035 |
| | atm | Standard Atmosphere | inHg | (x) * 29.9213 |
| | atm | Standard Atmosphere | mH2O | (x) * 10.33227453 |
| | atm | Standard Atmosphere | mHg | (x) * 0.76 |
| | atm | Standard Atmosphere | Pa | (x) * 101325 |
| | atm | Standard Atmosphere | psi | (x) * 14.69594878 |
| | atm | Standard Atmosphere | g/cm2 | (x) * 1033.2275547715 |
| | Atmosphere | Technical Atmosphere | bar (Default) | (x) * 0.980665 |
| | Atmosphere | Technical Atmosphere | ftH2O | (x) * 32.8093 |
| | Atmosphere | Technical Atmosphere | inH2O 60F | (x) * 394.089841 |
| | Atmosphere | Technical Atmosphere | inH2O | (x) * 393.71 |
| | Atmosphere | Technical Atmosphere | inHg | (x) * 28.9591 |
| | Atmosphere | Technical Atmosphere | mH2O | (x) * 10.0003 |
| | Atmosphere | Technical Atmosphere | mHg | (x) * 0.73556 |
| | Atmosphere | Technical Atmosphere | Pa | (x) * 98066.52 |
| | Atmosphere | Technical Atmosphere | psi | (x) * 14.2233 |
| | Atmosphere | Technical Atmosphere | g/cm2 | (x) * 1000.0 |
| | BAR | Bar | bar (Default) | (x) * 1 |
| | BAR | Bar | ftH2O | (x) * 33.488721 |
| | BAR | Bar | inH2O 60F | (x) * 401.8598 |
| | BAR | Bar | inH2O | (x) * 401.4742 |
| | BAR | Bar | inHg | (x) * 29.52998751 |
| | BAR | Bar | mH2O | (x) * 10.19716213 |
| | BAR | Bar | mHg | (x) * 0.750061683 |
| | BAR | Bar | Pa | (x) * 100000 |

| Category | ID | Description | Fluke Base UOM | Conversion Formula |
|----------|--------------|------------------------|-----------------|--------------------|
| | BAR | Bar | psi | (x) * 14.50377377 |
| | BAR | Bar | g/cm2 | (x) * 1019.7162 |
| | Bar Absolute | Bar Absolute | bar (Default) | (x) * 1 - 1.01325 |
| | CMH2O | Centimeters of Water | bar | (x) * 0.000980665 |
| | CMH2O | Centimeters of Water | ftH2O | (x) * 0.032841217 |
| | CMH2O | Centimeters of Water | inH2O 60F | (x) * 0.394094599 |
| | CMH2O | Centimeters of Water | inH2O | (x) * 0.393701 |
| | CMH2O | Centimeters of Water | inHg | (x) * 0.028959025 |
| | CMH2O | Centimeters of Water | mH2O (Default) | (x) * 0.01 |
| | CMH2O | Centimeters of Water | mHg | (x) * 0.000735559 |
| | CMH2O | Centimeters of Water | Pa | (x) * 98.0665 |
| | CMH2O | Centimeters of Water | psi | (x) * 0.014223343 |
| | CMH2O | Centimeters of Water | g/cm2 | (x) * 0.999972 |
| | CMHG | Centimeters of Mercury | bar | (x) * 0.013332237 |
| | CMHG | Centimeters of Mercury | ftH2O | (x) * 0.44647956 |
| | CMHG | Centimeters of Mercury | inH2O 60F | (x) * 5.357754719 |
| | CMHG | Centimeters of Mercury | inH2O | (x) * 5.352549 |
| | CMHG | Centimeters of Mercury | inHg | (x) * 0.393700787 |
| | CMHG | Centimeters of Mercury | mH2O | (x) * 0.135950981 |
| | CMHG | Centimeters of Mercury | mHg (Default) | (x) * 0.01 |
| | CMHG | Centimeters of Mercury | Pa | (x) * 1333.223684 |
| | CMHG | Centimeters of Mercury | psi | (x) * 0.193367747 |
| | CMHG | Centimeters of Mercury | g/cm2 | (x) * 13.595098 |
| | FT H2O | Feet of Water | bar | (x) * 0.0298608 |
| | FT H2O | Feet of Water | ftH2O (Default) | (x) * 1 |
| | FT H2O | Feet of Water | inH2O 60F | (x) * 12 |
| | FT H2O | Feet of Water | inH2O | (x) * 11.997 |
| | FT H2O | Feet of Water | inHg | (x) * 0.881789051 |

| Category | ID | Description | Fluke Base UOM | Conversion Formula |
|----------|--------|-------------------|-----------------|--------------------|
| | FT H2O | Feet of Water | mH2O | (x) * 0.304495419 |
| | FT H2O | Feet of Water | mHg | (x) * 0.022397442 |
| | FT H2O | Feet of Water | Pa | (x) * 2986.08 |
| | FT H2O | Feet of Water | psi | (x) * 0.433094288 |
| | FT H2O | Feet of Water | g/cm2 | (x) * 30.471 |
| | HPA | Hectopascal | bar | (x) * 0.001 |
| | HPA | Hectopascal | ftH2O | (x) * 0.033488721 |
| | HPA | Hectopascal | inH2O 60F | (x) * 0.401864652 |
| | HPA | Hectopascal | inH2O | (x) * 0.401463133 |
| | HPA | Hectopascal | inHg | (x) * 0.029529988 |
| | HPA | Hectopascal | mH2O | (x) * 0.010197162 |
| | HPA | Hectopascal | mHg | (x) * 0.000750062 |
| | HPA | Hectopascal | Pa (Default) | (x) * 100 |
| | HPA | Hectopascal | psi | (x) * 0.014503774 |
| | HPA | Hectopascal | g/cm2 | (x) * 1.019716213 |
| | IN H2O | Inches of Water | bar | (x) * 0.0024884 |
| | IN H2O | Inches of Water | ftH2O | (x) * 0.083333333 |
| | IN H2O | Inches of Water | inH2O 60F | (x) * 1.00096 |
| | IN H2O | Inches of Water | inH2O (Default) | (x) * 1 |
| | IN H2O | Inches of Water | inHg | (x) * 0.073482421 |
| | IN H2O | Inches of Water | mH2O | (x) * 0.025374618 |
| | IN H2O | Inches of Water | mHg | (x) * 0.001866453 |
| | IN H2O | Inches of Water | Pa | (x) * 248.84 |
| | IN H2O | Inches of Water | psi | (x) * 0.036091191 |
| | IN H2O | Inches of Water | g/cm2 | (x) * 2.5375 |
| | IN HG | Inches of Mercury | bar | (x) * 0.033863882 |
| | IN HG | Inches of Mercury | ftH2O | (x) * 1.134058082 |
| | IN HG | Inches of Mercury | inH2O 60F | (x) * 13.60869699 |

| Category | ID | Description | Fluke Base UOM | Conversion Formula |
|----------|---------|---------------------|----------------|------------------------------------|
| | IN HG | Inches of Mercury | inH2O | (x) * 13.595 |
| | IN HG | Inches of Mercury | inHg (Default) | (x) * 1 |
| | IN HG | Inches of Mercury | mH2O | (x) * 0.345315491 |
| | IN HG | Inches of Mercury | mHg | (x) * 0.0254 |
| | IN HG | Inches of Mercury | Pa | (x) * 3386.388158 |
| | IN HG | Inches of Mercury | psi | (x) * 0.491154078 |
| | IN HG | Inches of Mercury | g/cm2 | (x) * 34.532 |
| | KPA | Kilopascal | bar | (x) * 0.01 |
| | KPA | Kilopascal | ftH2O | (x) * 0.33488721 |
| | KPA | Kilopascal | inH2O 60F | (x) * 4.01864652 |
| | KPA | Kilopascal | inH2O | (x) * 4.01463133 |
| | KPA | Kilopascal | inHg | (x) * 0.295299875 |
| | KPA | Kilopascal | mH2O | (x) * 0.101971621 |
| | KPA | Kilopascal | mHg | (x) * 0.007500617 |
| | KPA | Kilopascal | Pa (Default) | (x) * 1000 |
| | KPA | Kilopascal | psi | (x) * 0.145037738 |
| | KPA | Kilopascal | g/cm2 | (x) * 10.19716213 |
| | kPa abs | Kilopascal Absolute | bar | (x) * 0.01 - 1.01325 |
| | kPa abs | Kilopascal Absolute | Pa (Default) | (x) * 1000 -101325 |
| | kPa abs | Kilopascal Absolute | psi | (x) * 0.1450377377 -14.69594878 |
| | M HG | Meters of Mercury | bar | (x) * 1.333223684 |
| | M HG | Meters of Mercury | ftH2O | (x) * 44.64795599 |
| | M HG | Meters of Mercury | inH2O 60F | (x) * 535.7754719 |
| | M HG | Meters of Mercury | inH2O | (x) * 535.25 |
| | M HG | Meters of Mercury | inHg | (x) * 39.37007874 |
| | M HG | Meters of Mercury | mH2O | (x) * 13.59509806 |
| | M HG | Meters of Mercury | mHg (Default) | (x) * 1 |
| | M HG | Meters of Mercury | Pa | (x) * 0.133322368 |

| Category | ID | Description | Fluke Base UOM | Conversion Formula |
|----------|----------|----------------------|----------------|---------------------------------|
| | M HG | Meters of Mercury | psi | (x) * 19.3367747 |
| | M HG | Meters of Mercury | g/cm2 | (x) * 1359.509806 |
| | MBAR | Millibar | bar (Default) | (x) * 0.001 |
| | MBAR | Millibar | ftH2O | (x) * 0.033488721 |
| | MBAR | Millibar | inH2O 60F | (x) * 0.4018598072 |
| | MBAR | Millibar | inH2O | (x) * 0.401864652 |
| | MBAR | Millibar | inHg | (x) * 0.029529988 |
| | MBAR | Millibar | mH2O | (x) * 0.010197162 |
| | MBAR | Millibar | mHg | (x) * 0.000750062 |
| | MBAR | Millibar | Pa | (x) * 100 |
| | MBAR | Millibar | psi | (x) * 0.014503774 |
| | MBAR | Millibar | g/cm2 | (x) * 1.019716213 |
| | mbar abs | Millibar Absolute | bar (Default) | (x) * 0.001 - 1.01325 |
| | mBar abs | Millibar Absolute | Pa | (x) * 100 - 101325 |
| | mBar abs | Millibar Absolute | psi | (x) * 0.014503774 - 14.69594878 |
| | mH2O | Meter of Water | bar | (x) * 0.0980665 |
| | mH2O | Meter of Water | ftH2O | (x) * 3.284121658 |
| | mH2O | Meter of Water | inH2O 60F | (x) * 3.940789976 |
| | mH2O | Meter of Water | inH2O | (x) * 39.40945989 |
| | mH2O | Meter of Water | inHg | (x) * 2.89590252 |
| | mH2O | Meter of Water | mH2O (Default) | (x) * 1 |
| | mH2O | Meter of Water | mHg | (x) * 73.55592401 |
| | mH2O | Meter of Water | Pa | (x) * 0.00980665 |
| | mH2O | Meter of Water | psi | (x) * 1.422334331 |
| | mH2O | Meter of Water | g/cm2 | (x) * 9.999724677 |
| | MMH2O | Millimeters of Water | bar | (x) * 0.0000980665 |
| | MMH2O | Millimeters of Water | ftH2O | (x) * 0.003284122 |
| | MMH2O | Millimeters of Water | inH2O 60F | (x) * 0.03940945989 |

| Category | ID | Description | Fluke Base UOM | Conversion Formula |
|----------|-------|------------------------|----------------|------------------------|
| | MMH2O | Millimeters of Water | inH2O | (x) * 0.039408 |
| | MMH2O | Millimeters of Water | inHg | (x) * 0.002895903 |
| | MMH2O | Millimeters of Water | mH2O (Default) | (x) * 0.001 |
| | MMH2O | Millimeters of Water | mHg | (x) * 0.00007355592401 |
| | MMH2O | Millimeters of Water | Pa | (x) * 9.80665 |
| | MMH2O | Millimeters of Water | psi | (x) * 0.001422334 |
| | MMH2O | Millimeters of Water | g/cm2 | (x) * 0.099997 |
| | MMHG | Millimeters of Mercury | bar | (x) * 0.001333224 |
| | MMHG | Millimeters of Mercury | ftH2O | (x) * 0.044647956 |
| | MMHG | Millimeters of Mercury | inH2O 60F | (x) * 0.5357754719 |
| | MMHG | Millimeters of Mercury | inH2O | (x) * 535.25 |
| | MMHG | Millimeters of Mercury | inHg | (x) * 0.039370079 |
| | MMHG | Millimeters of Mercury | mH2O | (x) * 0.013595098 |
| | MMHG | Millimeters of Mercury | mHg (Default) | (x) * 0.001 |
| | MMHG | Millimeters of Mercury | Pa | (x) * 133.3223684 |
| | MMHG | Millimeters of Mercury | psi | (x) * 0.019336775 |
| | MMHG | Millimeters of Mercury | g/cm2 | (x) * 1.359509806 |
| | MPA | Megapascal | bar | (x) * 10 |
| | MPA | Megapascal | ftH2O | (x) * 334.88721 |
| | MPA | Megapascal | inH2O 60F | (x) * 4018.64652 |
| | MPA | Megapascal | inH2O | (x) * 40146.3133 |
| | MPA | Megapascal | inHg | (x) * 295.2998751 |
| | MPA | Megapascal | mH2O | (x) * 101.9716213 |
| | MPA | Megapascal | mHg | (x) * 7.500616827 |
| | MPA | Megapascal | Pa (Default) | (x) * 1000000 |
| | MPA | Megapascal | psi | (x) * 145.0377377 |
| | MPA | Megapascal | g/cm2 | (x) * 10197.16213 |
| | PA | Pascal | bar | (x) * 0.00001 |

| Category | ID | Description | Fluke Base UOM | Conversion Formula |
|----------|--------|---------------------------------|----------------|--------------------------------|
| | PA | Pascal | ftH2O | (x) * 0.000334887 |
| | PA | Pascal | inH2O 60F | (x) * 0.00401864652 |
| | PA | Pascal | inH2O | (x) * 0.00401463133 |
| | PA | Pascal | inHg | (x) * 0.0002953 |
| | PA | Pascal | mH2O | (x) * 0.000101972 |
| | PA | Pascal | mHg | (x) * 0.00000750062 |
| | PA | Pascal | Pa (Default) | (x) * 1 |
| | PA | Pascal | psi | (x) * 0.000145038 |
| | PA | Pascal | g/cm2 | (x) * 0.01019716213 |
| | PSI | Pounds/Sq Inch | bar | (x) * 0.068947573 |
| | PSI | Pounds/Sq Inch | ftH2O | (x) * 2.308966033 |
| | PSI | Pounds/Sq Inch | inH2O 60F | (x) * 27.7075924 |
| | PSI | Pounds/Sq Inch | inH2O | (x) * 27.681 |
| | PSI | Pounds/Sq Inch | inHg | (x) * 2.036020967 |
| | PSI | Pounds/Sq Inch | mH2O | (x) * 0.70306958 |
| | PSI | Pounds/Sq Inch | mHg | (x) * 0.051714933 |
| | PSI | Pounds/Sq Inch | Pa | (x) * 6894.757293 |
| | PSI | Pounds/Sq Inch | psi (Default) | (x) * 1 |
| | PSI | Pounds/Sq Inch | g/cm2 | (x) * 70.307 |
| | PSIA | Pounds/Sq Inch Absolute | bar | (x) * 0.068954757293 - 1.01325 |
| | PSIA | Pounds/Sq Inch Absolute | Pa | (x) * 6894.757293 - 101325 |
| | PSIA | Pounds/Sq Inch Absolute | psi (Default) | (x) * 1 - 14.69594878 |
| | KG/CM2 | Kilograms per Square Centimeter | bar | (x) * 0.980665 |
| | KG/CM2 | Kilograms per Square Centimeter | ftH2O | (x) * 32.84121658 |
| | KG/CM2 | Kilograms per Square Centimeter | inH2O 60F | (x) * 394.0945989 |
| | KG/CM2 | Kilograms per Square Centimeter | inH2O | (x) * 393.70079003585 |
| | KG/CM2 | Kilograms per Square Centimeter | inHg | (x) * 28.9590252 |
| | KG/CM2 | Kilograms per Square Centimeter | mH2O | (x) * 10 |

| Category | ID | Description | Fluke Base UOM | Conversion Formula |
|----------|-----------|---------------------------------|---------------------|---------------------|
| | KG/CM2 | Kilograms per Square Centimeter | mHg | (x) * 0.7355592401 |
| | KG/CM2 | Kilograms per Square Centimeter | Pa | (x) * 98066.5 |
| | KG/CM2 | Kilograms per Square Centimeter | psi | (x) * 14.22334331 |
| | KG/CM2 | Kilograms per Square Centimeter | g/cm2 (Default) | (x) * 1000 |
| | G/CM2 | Grams per Square Centimeter | bar | (x) * 0.000980665 |
| | G/CM2 | Grams per Square Centimeter | ftH2O | (x) * 0.032809353 |
| | G/CM2 | Grams per Square Centimeter | inH2O 60F | (x) * 0.3940898478 |
| | G/CM2 | Grams per Square Centimeter | inH2O | (x) * 0.3937117094 |
| | G/CM2 | Grams per Square Centimeter | inHg | (x) * 0.028959095 |
| | G/CM2 | Grams per Square Centimeter | mH2O | (x) * 0.10000275331 |
| | G/CM2 | Grams per Square Centimeter | mHg | (x) * 0.00735561273 |
| | G/CM2 | Grams per Square Centimeter | Pa | (x) * 98.0665 |
| | G/CM2 | Grams per Square Centimeter | psi | (x) * 0.0142233433 |
| | G/CM2 | Grams per Square Centimeter | g/cm2 (Default) | (x) * 1 |
| | INH2O_60F | Inches of Water (60°F) | bar | (x) * 0.00248843 |
| | INH2O_60F | Inches of Water (60°F) | ftH2O | (x) * 0.0832534845 |
| | INH2O_60F | Inches of Water (60°F) | inH2O 60F (Default) | (x) * 1 |
| | INH2O_60F | Inches of Water (60°F) | inH2O | (x) * 0.9990404766 |
| | INH2O_60F | Inches of Water (60°F) | inHg | (x) * 0.0734834838 |
| | INH2O_60F | Inches of Water (60°F) | mH2O | (x) * 0.25375622809 |
| | INH2O_60F | Inches of Water (60°F) | mHg | (x) * 0.01866481151 |
| | INH2O_60F | Inches of Water (60°F) | Pa | (x) * 248.843 |
| | INH2O_60F | Inches of Water (60°F) | psi | (x) * 0.0360916258 |
| | INH2O_60F | Inches of Water (60°F) | g/cm2 | (x) * 2.5374924159 |

| Category | ID | Description | Fluke Base UOM | Conversion Formula |
|-------------|------------|---------------------|----------------------|------------------------------|
| Temperature | DEG C | Degrees Celsius | Celsius (Default) | (x) °C * 1 |
| | DEG C | Degrees Celsius | Fahrenheit | ((x) °C × 9/5) + 32 |
| | DEG C | Degrees Celsius | Kelvin | (x) °C + 273.15 |
| | DEG C | Degrees Celsius | Rankine | ((x) °C × 9/5) + 491.67 |
| | DEG F | Degrees Fahrenheit | Fahrenheit (Default) | (x) °F * 1 |
| | DEG F | Degrees Fahrenheit | Celsius | ((x) °F - 32) × 5/9 |
| | DEG F | Degrees Fahrenheit | Kelvin | ((x) °F - 32) × 5/9 + 273.15 |
| | DEG F | Degrees Fahrenheit | Rankine | (x) °F + 459.67 |
| | K | Kelvin | Kelvin | (x) K * 1 |
| | K | Kelvin | Celsius (Default) | (x) K - 273.15 |
| | K | Kelvin | Fahrenheit | (x) K - 273.15) × 9/5 + 32 |
| | K | Kelvin | Rankine | (x) K × 9/5 |
| | R | Rankine | Rankine | (x) °R * 1 |
| | R | Rankine | Celsius | ((x) °R - 491.67) × 5/9 |
| | R | Rankine | Fahrenheit (Default) | (x) °R - 459.67 |
| R | Rankine | Kelvin | (x) °R x 5/9 | |
| Voltage | DC mV | Millivolts DC | Volts DC (Default) | (x) * 0.001 |
| | DCV | Volts (DC) | Volts DC | (x) * 1 |
| | ACV | Volts (AC) | Volts AC | (x) * 1 |
| | AC mV | Millivolts AC | Volts AC | (x) * 0.001 |
| Current | MA | Milliamperes | Amps (Default) | (x) * 0.001 |
| | MADC | Milliamperes DC | Amps DC | (x) * 0.001 |
| | mA AC | Milliamperes AC | Amps AC | (x) * 0.001 |
| Frequency | imp/min | Pulse per Minute | HZ (Default) | (x) / 60 |
| | HZ (Sine) | Hertz (Sine Wave) | HZ (Sine) | (x) * 1 |
| | HZ (SqrWv) | Hertz (Square Wave) | HZ (SqrWv) | (x) * 1 |
| Resistance | OHMS | Ohms | Ohms (Default) | (x) * 1 |
| | KOHM | Kiloohms | Ohms | (x) * 1000 |

Calibration Management Calculations

This topic describes the various calculations performed by GE Digital APM in Calibration Management.

Calculating Error

AF Error % = [(Primary Output AF - Expected Primary Output AF) / (Primary Output URV - Primary Output LRV)] * 100

Engineering Unit AF Error = Primary Output AF - Expected Primary Output AF

...where Expected Primary Output AF = $\{[(\text{Input Measure AF} - \text{Primary Input LRV}) / (\text{Primary Input URV} - \text{Primary Input LRV})] * (\text{Primary Output URV} - \text{Primary Output LRV})\} + \text{Primary Output LRV}$

For example, consider the following values:

- Primary Input LRV = 0
- Primary Input URV = 100
- Primary Input Unit = DCV
- Primary Output LRV = 4
- Primary Output URV = 20
- Primary Output Unit = MA
- Calibration Strategy = 3D

Suppose Input Measure AF = 100.

Given these values:

- Expected Primary Output AF = $\{[(100 - 0) / (100 - 0)] * (20 - 4)\} + 4 = 20$
- Percentage of Range AF Error % = $[(21 - 20) / (20 - 4)] * 100 = 6.25$
- Engineering Unit AF Error = $21 - 20 = 1$

Note: Similar calculations are used to determine these values for AL error.

Based on the calculations, the following tables provide the final output for various values of Input Measure AF and Input Measure AL:

Table 2: Percent of Range Error

| % Scale | Up/Down | Input Measure AF | Primary Output AF | Error AF% | Input Measure AL | Primary Output AL | Error AL % |
|---------|---------|------------------|-------------------|-----------|------------------|-------------------|------------|
| 100 | Down | 100 | 21 | 6.25 | 100 | 20.25 | 1.5625 |
| 50 | Down | 50 | 12.75 | 4.6875 | 50 | 12.15 | 0.9375 |
| 0 | Down | 0 | 4.25 | 1.5625 | 0 | 4.25 | 1.5625 |

Table 3: Engineering Unit Error

| % Scale | Up/Down | Input Measure AF | Primary Output AF | Engg. Unit AF Error | Input Measure AL | Primary Output AL | Engg. Unit AL Error |
|---------|---------|------------------|-------------------|---------------------|------------------|-------------------|---------------------|
| 100 | Down | 100 | 21 | 1 | 100 | 20.25 | 0.25 |
| 50 | Down | 50 | 12.75 | 0.75 | 50 | 12.15 | 0.15 |
| 0 | Down | 0 | 4.25 | 0.25 | 0 | 4.25 | 0.25 |

Calculating RMS Error

RMS Error = $\sqrt{(\text{Sum of the squares of individual error values for each test point}) / \text{number of test points}}$

For example, consider the following error values:

| Test Point Number | Error Value (%) |
|-------------------|-----------------|
| 1 | 2 |
| 2 | 2.1 |
| 3 | 1.95 |

Given these values:

$$\text{RMS Error} = \sqrt{(2^2 + 2.1^2 + 1.95^2)/3}$$

$$\text{RMS Error} = 1.992$$

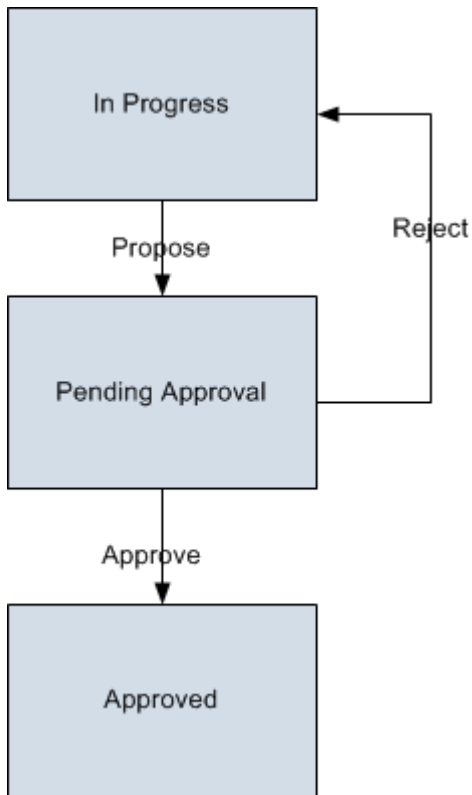
Calibration State Management

The following baseline record states are configured for the Calibration family:

- **In Progress:** Indicates that the Calibration is in progress or yet to be sent for approval. You can modify a Calibration only if it is in the In Progress state. After you have entered all the required information in the Calibration, you can send it for approval by changing the state to Pending Approval.
- **Pending Approval:** Indicates that the Calibration has been sent for approval. If you are a member of the MI Calibration Administrator Security Group, you can approve or reject the Calibration. If you approve the Calibration, the state of the Calibration changes to Approved. If you reject the Calibration, the state of the Calibration changes to In Progress.
- **Approved:** Indicates that the Calibration has been approved. After the state of a Calibration is set to Approved:
 - The associated Calibration Task is cycled. That is, the Last Date field is set to the date on which the state of the Calibration is set to Approved. The Next Date field is set to the date on which the Calibration must be performed again (in case of a recurring task).
 - The Calibration is closed.
 - You cannot delete the Calibration.

Illustration of the Calibration State Configuration

By default, the following baseline State Configuration exists for the Calibration family:



Calibration Management Site Filtering

In Calibration Management, site is assigned to records as follows:

- Tasks, Calibrations, and applied templates inherit the site assignment of the asset being calibrated.
- Calibration Templates stored in the Template Library are designated as global records, which means that they can be accessed by all users.
- Test equipment and standards are assigned sites based on the user's selection in the Site control.

In Calibration Management, users will see only records that are assigned to their site(s) or that are global records.

Tip: For more information, refer to the Site Filtering section of the documentation.

Example

Suppose an organization that has three sites, Site X, Site Y, and Site Z. The following Calibration Management records exist:

- Test Equipment 1, Standards 1, Asset 1, Calibration Profile 1, Applied Templates 1, Calibration Task 1, Calibration Event 1, Instrumentation System 1: Assigned to Site X
- Test Equipment 2, Standards 2, Asset 2, Calibration Profile 2, Applied Templates 2, Calibration Task 2, Calibration Event 2, Instrumentation System 2: Assigned to Site Y
- Test Equipment 3, Standards 3, Asset 3, Calibration Profile 3, Applied Templates 3, Calibration Task 3, Calibration Event 3, Instrumentation System 3: Assigned to Site Z
- Test Equipment 4, Standards 4, Asset 4, Calibration Profile 4, Applied Templates 4, Calibration Task 4, Calibration Event 4, Instrumentation System 4, Template Library: No Site Assigned (global records)

Scenario 1: User assigned to only Site X

This user will see all Calibration Templates in the **Template Library** and the following:

| Site X Records | Site Y Records | Site Z Records | Global Records |
|--------------------------|----------------|----------------|--------------------------|
| Test Equipment 1 | None | None | Test Equipment 4 |
| Standards 1 | None | None | Standards 4 |
| Asset 1 | None | None | Asset 4 |
| Calibration Profile 1 | None | None | Calibration Profile 4 |
| Applied Templates 1 | None | None | Applied Templates 4 |
| Calibration Task 1 | None | None | Calibration Task 4 |
| Calibration Event 1 | None | None | Calibration Event 4 |
| Instrumentation System 1 | None | None | Instrumentation System 4 |

Scenario 2: User assigned to both Site X and Site Y

This user will see all Calibration Templates in the **Template Library** and the following:

| Site X Records | Site Y Records | Site Z Records | Global Records |
|--------------------------|--------------------------|----------------|--------------------------|
| Test Equipment 1 | Test Equipment 2 | None | Test Equipment 4 |
| Standards 1 | Standards 2 | None | Standards 4 |
| Asset 1 | Asset 2 | None | Asset 4 |
| Calibration Profile 1 | Calibration Profile 2 | None | Calibration Profile 4 |
| Applied Templates 1 | Applied Templates 2 | None | Applied Templates 4 |
| Calibration Task 1 | Calibration Task 2 | None | Calibration Task 4 |
| Calibration Event 1 | Calibration Event 2 | None | Calibration Event 4 |
| Instrumentation System 1 | Instrumentation System 2 | None | Instrumentation System 4 |

Scenario 3: Super User

This user will see all Calibration Templates in the **Template Library** and the following:

| Site X Records | Site Y Records | Site Z Records | Global Records |
|--------------------------|--------------------------|--------------------------|--------------------------|
| Test Equipment 1 | Test Equipment 2 | Test Equipment 3 | Test Equipment 4 |
| Standards 1 | Standards 2 | Standards 3 | Standards 4 |
| Asset 1 | Asset 2 | Asset 3 | Asset 4 |
| Calibration Profile 1 | Calibration Profile 2 | Calibration Profile 3 | Calibration Profile 4 |
| Applied Templates 1 | Applied Templates 2 | Applied Templates 3 | Applied Templates 4 |
| Calibration Task 1 | Calibration Task 2 | Calibration Task 3 | Calibration Task 4 |
| Calibration Event 1 | Calibration Event 2 | Calibration Event 3 | Calibration Event 4 |
| Instrumentation System 1 | Instrumentation System 2 | Instrumentation System 3 | Instrumentation System 4 |

Important:

1. If a multi-site user or a Super User links child records from multiple sites to a parent record designated as **Global**, another user who does not have access to all sites may only see a portion of the data associated with that record.
2. If a multi-site user or a Super User creates a parent record designated as **Global**, you can still link child records from user-assigned sites and null sites (Global).

Family Field Descriptions

Calibration Asset Configuration Records

Calibration Asset Configuration records store information about the fields that are defined in the Calibration Asset Configuration family in the baseline GE Digital APM database. This topic provides an alphabetical list and description of the fields that exist for the Calibration Asset Configuration family and appear on the Asset ID Configuration datasheet. The information in the table reflects the baseline state and behavior of these fields.

This family is enabled for site filtering, which means that records in this family can be assigned to a specific site and will only be accessible to users who are assigned to the same site and have the appropriate license and family privileges. For more information, refer to the [Sites](#) section of the documentation.

| Field | Data Type | Description | Behavior and Usage |
|------------------|-----------|--|---|
| Asset Data Query | Character | Indicates the catalog query for the selected Asset family. | <p>This field contains the path of the data query from the Catalog folder. The query selected in this field is used to copy the asset field values to the associated applied template fields. For each new custom asset family that you add in the Asset ID Configuration workspace, you must create a query to map the custom asset fields to the applied template fields.</p> <p>This is a required field.</p> <p>Note:</p> <p>Before you select a query, ensure that the Asset ID field specified in the query matches the fields configured in the New Asset ID Configuration section, and the field names in the query must match the field names in the applied template.</p> |
| Asset Family | Character | Indicates the family for which you want to create a Calibration Asset Configuration. | <p>A value is required. This field contains a list of asset families. You can select any custom asset that you want to use as a Tag ID.</p> |
| Asset ID | Character | Indicates the field of the selected asset family to identify the Equipment, Functional Location, or custom asset that you want to calibrate. | <p>This field contains a list of fields of the Asset family selected in the Asset family field. The value in this field is used to construct the applied template ID and in the data loader to identify the asset. The value in this field is used to populate the Asset ID field in the Calibration Queue section, the Calibration Events section, and the Linked Assets subsection in the Calibration Profile section.</p> <p>This is a required field.</p> |

Calibration, CMX Records

Calibration, CMX record is a type of Calibration record that stores information about the calibration events that you have created manually for calibration profiles of type Calibration Template, CMX or events that you have received from Beamex CMX calibration software. This topic provides an alphabetical list and description of the fields that exist for the Calibration, CMX family. The information in this table reflects the baseline state and behavior of these fields. This list is not comprehensive.

This family is enabled for site filtering, which means that records in this family can be assigned to a specific site and will only be accessible to users who are assigned to the same site and have the appropriate license and family privileges. For more information, refer to the [Sites](#) section of the documentation.

| Field | Data Type | Description | Behavior and Usage |
|-------------------------|-----------|--|--|
| Ad-Hoc Calibration | Boolean | <p>Indicates that the calibration is performed on the asset that needs to be calibrated outside of its calibration schedule.</p> <p>For example, suppose an asset has an annual calibration task in January. If the asset needs a repair or replacement during the year, after the asset is repaired or replaced, the asset should be calibrated. An Ad-Hoc calibration is performed in this scenario.</p> | <p>By default, this check box is cleared. If you select this check box, after you perform the calibration, the associated Calibration Task is not recycled.</p> |
| Asset ID | Character | The Identification of the asset that you have calibrated. | <p>This field is populated with the Equipment ID of the asset that is linked to the Calibration.</p> <p>This field is labeled Select Equipment on the datasheet. You can select the Equipment ID hyperlink to view the Asset details.</p> |
| Asset Short Description | Character | A brief description of the asset that you have calibrated. | <p>This field is populated with the value stored in the Equipment Short Description field in the Asset that is linked to the Calibration.</p> <p>This field is labeled Equipment Short Description on the datasheet. You can modify this value if needed.</p> |
| Asset Type | Character | The type of the asset that you have calibrated. | <p>This field is populated with the value stored in the Equipment Type field in the Asset that is linked to the Calibration.</p> <p>This field is labeled Equipment Type on the datasheet. You can modify this value if needed.</p> |
| Calibration Approval By | Character | The name and User ID of the user who approved the calibration. | This field contains a list of user names. You can select the appropriate user from the list. |

| Field | Data Type | Description | Behavior and Usage |
|--------------------------|-----------|---|--|
| Calibration Error Limit | Numeric | A number indicating the maximum percentage of acceptable error before the calibration is considered to be failed. | This field is populated with the value stored in the Max Error Limit field of the Calibration Template that is linked to this Calibration. You can modify this value if needed. |
| Calibration Passed | Character | A value that indicates whether the calibration has passed or failed. | In automated calibration, this field is populated based on the calibration results that are received from the Beamex CMX calibration software. In manual calibration, you can select one of the following values that are defined in the MI_CALIBRATION_RESULT System Code Table, to indicate the result of calibration: <ul style="list-style-type: none"> • PASS • FAIL |
| Calibration Strategy | Character | The strategy for performing the calibration. | This field is disabled and populated with the value in the Calibration Strategy field of the Calibration Template that is linked to this Calibration. |
| Calibration Task | Character | The identification of the Calibration Task that is linked to this Calibration. | This field is disabled and populated with the ID of the Calibration Task that is associated with the Calibration. |
| Calibration Technician | Character | The name of the person who is responsible for performing the calibration. | You can modify this value by selecting a user from the list. |
| Calibration Template Key | Numeric | The ID of the Calibration Template linked to the Calibration. | This field is disabled and populated with the ID of the Calibration Template that is associated with the Calibration. This field is labeled Select Calibration on the datasheet. |
| Calibration Type | Character | The type of calibration event. | This field is disabled and populated with the value CMX. |

| Field | Data Type | Description | Behavior and Usage |
|------------------------|-----------|---|--|
| Event End Date | Date | The date on which you have completed the calibration. | This field is populated with the current date and time. This field is labeled Calibration End Date on the datasheet. You can modify this value if needed. |
| Event ID | Character | The identification of the calibration event. | This field is disabled and populated with a default value. |
| Event Long Description | Character | Any comments on the calibration that you have performed. | This field is populated with the value in the Comments field of the calibration in the Beamex CMX calibration software. This field is labeled Comments on the datasheet. |
| Equipment Manufacturer | Character | The manufacturer of the asset that you have calibrated. | This field is populated with the value stored in the Manufacturer field in the Asset that is linked to the Calibration. This field is labeled Instrument Manufacturer on the datasheet. You can modify this value if needed. |
| Equipment Model Number | Character | The model number of the asset that you have calibrated. | This field is populated with the value stored in the Model Number field in the Asset that is linked to the Calibration. This field is labeled Instrument Model Number on the datasheet. You can modify this value if needed. |
| Event Start Date | Date | The date on which you have started calibrating the asset. | This field is populated with the current date and time. This field is labeled Calibration Start Date on the datasheet. You can modify this value if needed. |

| Field | Data Type | Description | Behavior and Usage |
|----------------------------|-----------|---|--|
| Equipment Serial Number | Character | The serial number of the asset that you have calibrated. | This field is populated with the value stored in the Equipment Serial Number field in the Asset that is linked to the Calibration. This field is labeled Instrument Serial Number on the datasheet. You can modify this value if needed. |
| Location ID | Character | The physical location where you have performed the calibration. | You can enter a value manually. |
| Location Short Description | Character | A description of the location where you have performed the calibration. | You can enter a value manually. |
| Scheduled Calibration Date | Date | The date on which the calibration is scheduled to be performed. | You can enter a value manually. |
| Off Line Duration | Numeric | A number representing the amount of time in hours that passed between the time the calibration was initiated and the time that it was completed. | You can enter a value manually. |
| Overall AF Pass/Fail | Character | A value that indicates whether the calibration has passed or failed based on whether the As Found values fall within the range of values specified in the record. | In automated calibration, this field is populated based on the calibration results that are received from the Beamex CMX calibration software. In manual calibration, you can select one of the following values that are defined in the MI_CALIBRATION_RESULT System Code Table, to indicate the result of calibration: <ul style="list-style-type: none"> • PASS • FAIL |
| Overall AF Error Max | Numeric | A number that corresponds to the highest error value recorded from all the As Found values. | In automated calibration, this field is populated based on the calibration results that are received from the Beamex CMX calibration software. In manual calibration, you can enter a value manually. |

| Field | Data Type | Description | Behavior and Usage |
|----------------------|-----------|---|--|
| Overall AL Error Max | Numeric | The highest error value recorded from all the As Left values. | In automated calibration, this field is populated based on the calibration results that are received from the Beamex CMX calibration software. In manual calibration, you can enter a value manually. |
| Overall AL Pass/Fail | Character | A value that indicates whether the calibration has passed or failed based on whether the As Left values fall within the range of values specified in the Calibration. | In automated calibration, this field is populated based on the calibration results that are received from the Beamex CMX calibration software. In manual calibration, you can select one of the following values that are defined in the MI_CALIBRATION_RESULT System Code Table, to indicate the result of calibration: <ul style="list-style-type: none"> • PASS • FAIL |
| WO Reference | Character | The work order number associated with the calibration event. | You can enter a value manually. |

Calibration Device Mapping Records

Calibration Device Mapping records store information about the fields that are defined in the Calibration Device Mapping family in the baseline GE Digital APM database. This topic provides an alphabetical list and description of the fields that exist for the Calibration Device Mapping family and appear on the Calibration Device Mapping datasheet. The information in the table reflects the baseline state and behavior of these fields. This list is not comprehensive.

This family is not enabled for site filtering, which means that records in this family can be accessed by any user with the appropriate license and family privileges. For more information, refer to the [Sites](#) section of the documentation.

| Field | Data Type | Description | Behavior and Usage |
|-------------------|-----------|---|--|
| Device Driver ID | Character | The ID of the supported driver. | This field does not appear on the datasheet and is auto populated with the ID of the selected supported driver. |
| Linked Mapping | Character | A value associated with the send mapping for the selected receive mapping. | This field is enabled when the value in the Mapping Direction field is Receive. This list is filtered by the value that you select in the Template Type field. This field is required. |
| Mapping Direction | Character | The type of direction of the outgoing data from GE Digital APM to a calibrator and incoming data from a calibrator to GE Digital APM. | This field appears a list and contains the following values: <ul style="list-style-type: none"> • Send • Receive When you select Receive, the Linked Mapping field is enabled. |
| Mapping ID | Character | The ID of the device mapping | You can enter a value in this field. The value must be unique. This field is required. |
| Mapping Query | Character | The query for sending data to a calibrator or receiving data from a calibrator. | You must select a query that has been specified in the Queries Folder. For more information, refer to the Queries Folder section of the documentation.. |
| Mapping Type | Character | The type of device mapping. | On the datasheet, this field appears as a list labeled Template Type and contains the following calibration templates: <ul style="list-style-type: none"> • Analog Calibration • Discrete Calibration • Functional Test Depending on the selection, the Linked Mapping field is populated automatically. |

Calibration Profile Records

Calibration Profile records store information about the fields that are defined for the Calibration Profile family. This topic provides an alphabetical list and description of the fields that exist for the Calibration

Profile family and appear on the Calibration Profile datasheet. The information in the table reflects the baseline state and behavior of these fields. This list is not comprehensive.

This family is enabled for site filtering, which means that records in this family can be assigned to a specific site and will only be accessible to users who are assigned to the same site and have the appropriate license and family privileges. For more information, refer to the [Sites](#) section of the documentation.

| Field | Data Type | Description | Behavior and Usage |
|----------------------|-----------|---|--|
| Calibration Strategy | Character | The type of strategy for the calibration. | <p>A value is required.</p> <p>This field is:</p> <ul style="list-style-type: none"> • Blank if you created the Calibration Profile in GE Digital APM V3.6.0.0.0 or later, and then upgraded to the current version. In this case, a value is not required. • Enabled and populated automatically if you created the Calibration Profile in GE Digital APM V4.2.0.0.0 or later, and then upgraded to the current version. • Disabled and populated with the value CMX if the value in the Device Type field is CMX. • Disabled and blank if the value in the Device Type field is Analyzer - Multi Component. • Disabled and populated automatically if the value in the Device Type field is Analyzer - Single Component or Functional - Manual. • Enabled and blank in all other scenarios. <p>The list of values in this field is filtered based on the mapping ID that is associated with the selected profile template. If the mapping ID, however, does not contain a mapped strategy, then a list of all the strategies for the template type associated with the mapping ID appears in this field.</p> <p>Note: If you select a Profile Template that contains Switch 1 details, and then in the Calibration Strategy field, if you select a Switch 2 strategy, a validation message appears, asking you to select a different strategy or modify the profile template. If this happens:</p> <ul style="list-style-type: none"> • In the Calibration Strategy field, select the calibration strategy. -or- • In the Profile Template field, select the profile template. |

| Field | Data Type | Description | Behavior and Usage |
|------------------|-----------|--|---|
| Device Type | Character | The type of calibration or calibration device. | <p>A value is required.</p> <p>This field is:</p> <ul style="list-style-type: none"> Blank if you created the Calibration Profile in GE Digital APM V3.6.0.0.0 or later, and then upgraded to the current version. In this case, a value is not required. Enabled and populated automatically if you created the Calibration Profile in GE Digital APM V4.2.0.0.0 or later, and then upgraded to the current version. Enabled and blank if you create the Calibration Profile in the current version. <p>On the datasheet, this field appears as a list labeled Calibration Type, and contains the following values:</p> <ul style="list-style-type: none"> Analog - Manual Analyzer - Multi Component Analyzer - Single Component CMX Druck DPI61x Druck DPI620 (Genii) Fluke 74X Functional Manual Switch - Manual |
| Is Upgraded | Boolean | Indicates whether the Calibration Profile was created in an earlier version of GE Digital APM or in the current version. | <p>This check box is enabled and:</p> <ul style="list-style-type: none"> Selected if the Calibration Profile was created in an earlier version of GE Digital APM (i.e., before upgrading to the current version). Cleared if the Calibration Profile was created in the current version. <p>By default, this field does not appear on the datasheet.</p> |
| Profile ID | Character | The ID of the calibration profile. | A value is required and must be unique. |
| Profile Template | Character | The ID of the profile template. | A value is required. The list of values in this field is filtered based on the value in the Device Type field. |

Calibration Profile Template Defaults Records

Calibration Profile Template Defaults records store information about the fields that are defined in the Calibration Profile Template Defaults family in the baseline GE Digital APM database. This topic provides an alphabetical list and description of the fields that exist for the Calibration Profile Template Defaults family and appear on the Calibration Profile Template Defaults datasheet. The information in the table reflects the baseline state and behavior of these fields. This list is not comprehensive.

This family is not enabled for site filtering, which means that records in this family can be accessed by any user with the appropriate license and family privileges. For more information, refer to the [Sites](#) section of the documentation.

| Field | Data Type | Description | Behavior and Usage | | | | | | | | | | |
|--|------------------------------|---|--|--------------------------------|------------------------------|--------------------|------------|----------------------|-------------|--|--------------------|------|--------|
| Calibration Mapping | Character | The type of mapping. | This field appears as a list and is filtered by the value that you select in the Template Type field. This field is required. | | | | | | | | | | |
| Custom Entered Values | Character | A value that indicates whether the Profile Template that uses this template default will contain custom entered values. | This field must contain one of the following values: <ul style="list-style-type: none"> • Only Input (INPUT) • Only Output (OUTPUT) • Both Input and Output (INPUT AND OUTPUT) • None (NONE) | | | | | | | | | | |
| Device Type | Character | The type of calibration device. | This field does not appear on the datasheet and is populated automatically. | | | | | | | | | | |
| Error Configuration | Character | A value indicating the error processing configuration for automated calibration. | This field is disabled and is populated automatically with the value that you select in the Manual Entered Values field, as per the following table: <table border="1" data-bbox="1144 1039 1414 1514"> <thead> <tr> <th>Value in Manual Entered Values</th> <th>Value in Error Configuration</th> </tr> </thead> <tbody> <tr> <td>Only Input (INPUT)</td> <td>UEV Source</td> </tr> <tr> <td>Only Output (OUTPUT)</td> <td>UEV Measure</td> </tr> <tr> <td>Both Input and Output (INPUT AND OUTPUT)</td> <td>UEV Measure Source</td> </tr> <tr> <td>None</td> <td>Normal</td> </tr> </tbody> </table> | Value in Manual Entered Values | Value in Error Configuration | Only Input (INPUT) | UEV Source | Only Output (OUTPUT) | UEV Measure | Both Input and Output (INPUT AND OUTPUT) | UEV Measure Source | None | Normal |
| Value in Manual Entered Values | Value in Error Configuration | | | | | | | | | | | | |
| Only Input (INPUT) | UEV Source | | | | | | | | | | | | |
| Only Output (OUTPUT) | UEV Measure | | | | | | | | | | | | |
| Both Input and Output (INPUT AND OUTPUT) | UEV Measure Source | | | | | | | | | | | | |
| None | Normal | | | | | | | | | | | | |
| Input Characteristic Curve | Character | A value indicating the characteristics of the input signal to the instrument being calibrated. | This field appears as a list and contains the following values: <ul style="list-style-type: none"> • Linear • None This field is required. | | | | | | | | | | |

| Field | Data Type | Description | Behavior and Usage |
|-----------------------------|-----------|---|--|
| Input Type | Character | The input type of the calibration. | <p>This list is populated by the MI_CALIBRATION_IO_TYPES System Code Table.</p> <p>You can choose from the following Input Types values:</p> <ul style="list-style-type: none"> • Pressure • Temperature • Other <p>This field is required.</p> |
| Manual Entered Values | Character | The type of manual value entered into the device during automated calibration. | <p>This field appears as a list and contains the following values:</p> <ul style="list-style-type: none"> • Only Input (INPUT) • Only Output (OUTPUT) • Both Input and Output (INPUT AND OUTPUT) • None (NONE) <p>Depending on the selection, the Error Configuration field is populated automatically.</p> <p>This field is required.</p> |
| Output Characteristic Curve | Character | A value indicating the characteristics of the output signal to the instrument being calibrated. | <p>This field appears as a list and contains the following values:</p> <ul style="list-style-type: none"> • Linear • None <p>This field is required.</p> |
| Output Range | Numeric | A value that is used to define measurement range setting of the calibrator. | <p>A value of 10 will set the Voltage range to 10 in the calibrator and the value in the Output Range Locked field will have to be set to 1 to enable this function.</p> <p>This field is required.</p> |
| Output Range Locked | Numeric | A number that represents if the auto range function in the calibrator is turned off or on. | <p>The valid input values are 0 or 1.</p> <ul style="list-style-type: none"> • If the value is set to 0, the auto range function in the calibrator is turned off. • If the value is set to 1, the auto range function in the calibration is turned on. <p>This field is required.</p> |

| Field | Data Type | Description | Behavior and Usage |
|----------------------|-----------|--|--|
| Performs Square Root | Character | A value that indicates if a square root calculation will be performed on the values in the Input Measure AF and Input Measure AL fields. | <p>The values in this field are populated by the MI_YES_NO System Code Table.</p> <p>This field is enabled only if the following criteria is met:</p> <ul style="list-style-type: none"> You can select the value Yes (Y) only if the value in the Input Type field is Pressure or Flow. When the value in the Calibration Strategy field is 2 Down or 2 Up then 2 Down, this field is disabled and displays the value No (N). You can select the value Yes (Y) only if the value in the Manual Entered Values field is None (NONE). <p>This field is required.</p> |
| Template Defaults ID | Character | A unique ID for the template defaults. | This field does not appear on the datasheet and is auto calculated. |
| Template Type | Character | The type of device mapping. | <p>This list contains the following Calibration Templates:</p> <ul style="list-style-type: none"> Analog Calibration Discrete Calibration Functional Test <p>Depending on the selection, the Calibration Mapping field is populated automatically.</p> |

Calibration Records

Calibration records store information about the calibration event that you have performed either manually or using a device. Based on the type of calibration that you have performed, the following Calibration records are created:

- Calibration, Analog: Stores information for linear or square root calibrations that have a single input signal, a primary output, and an optional secondary output. Examples of analog calibrations include gauges, flow, pressure, and temperature.
- Calibration, Discrete: Stores information for single-switch or dual-switch instruments. Examples of discrete calibrations include flow, level, pressure, temperature, vibration, and position switches.
- Calibration Weight Scale Setup: Stores information for weight scale calibrations.
- Calibration, Single Component Analyzer: Stores information for single component calibrations. Examples of single component analyzer calibrations include calibrating pH, in-situ oxygen, toxic gas, and combustible gas.

- Calibration, Multi-Component Analyzer: Stores information for comparing standard gas values to test results from the analyzer. Examples of multi-component analyzer calibrations include Mass Spectrometers and Process Gas Chromatographs.
- Calibration, Functional Test: Stores information for functional test calibrations. You can perform custom functional tests on an asset. An example of an instruction in a functional test is Describe the wires on the asset.
- Calibration, CMX: Stores information about calibrations that are received from CMX software. When you receive calibration data from CMX software, a [Calibration, CMX record](#) is automatically created for the event. This record contains an event ID, details of the asset that was calibrated, calibration strategy used, and the result of the calibration (that is, whether the calibration has passed or failed).
- Calibration, Summary Event: Stores information about the fields that are defined in the Calibration, Summary Event family in the GE Digital APM database. You can create a summary event to capture the overall Pass/Fail results for sub-assets and recycle the task at the Instrumentation System. Summary events are created when an event is created for any sub-assets within the Instrumentation System. The overall Pass/Fail for the summary event is calculated based on the Pass/Fail results of the events created at the sub-asset level. Summary events also allows you to view the calibration results of all the sub-assets related to the Instrumentation System.

This family is enabled for site filtering, which means that records in this family can be assigned to a specific site and will only be accessible to users who are assigned to the same site and have the appropriate license and family privileges. For more information, refer to the [Sites](#) section of the documentation.

This topic provides an alphabetical list and description of the fields that exist for the aforementioned Calibration families. The information in this table reflects the baseline state and behavior of these fields. This list is not comprehensive.

| Field | Data Type | Description | Behavior and Usage |
|-------------------------|-----------|--|--|
| Ad-Hoc Calibration | Boolean | Indicates whether the calibration is performed on the asset that needs to be calibrated outside of its calibration schedule. For example, suppose a piece of equipment has an annual calibration task in January. If the equipment needs a repair or replacement during the year, after the equipment is repaired or replaced, the equipment should be calibrated. An Ad-Hoc calibration is performed in this scenario. | By default, this check box is cleared. If you select this check box, after you perform the calibration, the associated Calibration Task is not recycled. |
| Calibration Approval By | Character | The name and User ID of the user who approved the calibration. | This field contains a list of users who are assigned the MI Calibration Administrator Security Group or the MI Safety Admin Security Role. |

| Field | Data Type | Description | Behavior and Usage |
|-------------------------|-----------|---|--|
| Calibration End Date | Date | The date on which you have completed the calibration. | This field is populated with the current date and time. You can modify this value if needed. |
| Calibration Error Limit | Numeric | A number indicating the maximum percentage of acceptable error before the calibration is considered to be failed. | <p>The state of this field depends on the state of other fields.</p> <ul style="list-style-type: none"> If the Error Assessment field in the Calibration Template records contains the value Percentage of Range, this field is enabled and populated with the value in the Max Error Limit field of the Calibration Template that is linked to this Calibration. If the Error Assessment field in the Calibration Template records contains the value Engineering Units, this field is disabled and populated with the value in the Engineering Units Error Limit field of the Calibration Template that is linked to this Calibration. <p>You can modify this value if needed.</p> |
| Calibration Start Date | Date | The date on which you started calibrating the asset. | This field is populated with the current date and time. You can modify this value if needed. |
| Calibration Strategy | Character | The number of test points and the direction of the input signal that will be recorded for the calibration. | This field is populated with the value in the Calibration Strategy field of the Calibration Template that is linked to this Calibration. |
| Calibration Task ID | Character | The ID of the Calibration Task that is linked to this Calibration. | This field is disabled and populated with the ID of the Calibration Task. |

| Field | Data Type | Description | Behavior and Usage |
|------------------------|-----------|---|--|
| Calibration Technician | Character | The name of the person who is responsible for performing the calibration. | <p>This field contains a list of Security Users who are assigned:</p> <ul style="list-style-type: none"> The MI Calibration Administrator or the MI Calibration User Security Group -or- The MI Safety Admin, MI Safety Power, or the MI Safety User Security Role <p>If you perform an automated calibration, this field is populated with the name and User ID of the user who created the record. You can, however, modify this value by selecting a user from the list.</p> |
| Calibration Template | Numeric | The ID of the Calibration Template that was used in the Calibration. | This field is disabled and populated with the ID of the Calibration Template. |
| Calibration Type | Character | The type of calibration event. | <p>This field is disabled and populated with one of the following values:</p> <ul style="list-style-type: none"> Fluke 74X Druck DPI620 (Genii) Druck DPI61x CMX Analog - Manual Analyzer - Multi Component Analyzer - Single Component Functional - Manual Switch - Manual |
| Comments | Character | Any comments on the calibration that you have performed. | You can enter your comments manually. |
| Cylinder Expiry Date | Date | The expiry date of the standard gas cylinder. | This field is disabled and populated based on your selection in the Cylinder ID field. |

| Field | Data Type | Description | Behavior and Usage |
|-------------------------------|-----------|--|--|
| Cylinder ID | Character | The Record ID of the Standard Gas Cylinder record that represents the standard gas cylinder used to perform the calibration. | This field contains a list of Record IDs of the existing Standard Gas Cylinder records. You can select a value in the list. |
| Engineering Units Error Limit | Character | The maximum amount of error in engineering units that is allowed before a calibration event is considered failed. | <p>This field appears only in the Calibration, Analog, Calibration, Discrete, Calibration, Weight Scale, and Calibration, Analyzer Single Component families.</p> <ul style="list-style-type: none"> If the Error Assessment field in the Calibration Template record contains the value Engineering Units, this field is enabled and populated with the value in the Engineering Units Error Limit field of the Calibration Template that is linked to this Calibration. If the Error Assessment field in the Calibration Template record contains the value Percent of Range, this field is disabled and populated with the value in the Max Error Limit field of the Calibration Template that is linked to this Calibration. <p>You can modify this value if needed.</p> |
| Equipment ID | Character | The ID of the asset that you have calibrated. | This field is disabled and populated with the ID of the asset. |
| Equipment Manufacturer | Character | The manufacturer of the asset that you have calibrated. | This field is populated with the value stored in the Manufacturer field in the Asset that is linked to the Calibration. You can modify this value if needed. |

| Field | Data Type | Description | Behavior and Usage |
|-----------------------------|-----------|--|--|
| Equipment Model Number | Character | The model number of the asset that you have calibrated. | This field is populated with the value stored in the Model Number field in the Asset that is linked to the Calibration. You can modify this value if needed. |
| Equipment Serial Number | Character | The serial number of the asset that you have calibrated. | This field is populated with the value stored in the Equipment Serial Number field in the Asset that is linked to the Calibration. You can modify this value if needed. |
| Equipment Short Description | Character | A brief description of the asset that you have calibrated. | This field is populated with the value stored in the Equipment Short Description field in the Asset that is linked to the Calibration. You can modify this value if needed. |
| Equipment Type | Character | The type of the asset that you have calibrated. | This field is populated with the value stored in the Equipment Type field in the Asset that is linked to the Calibration. You can modify this value if needed. |
| Error Assessment | Character | The measurement type that you will use in case of analog, discrete, single component analyzer, and weight scale calibration. | <p>This field is disabled and populated based on the Calibration Template that is linked to this Calibration.</p> <p>This field appears in the Calibration, Analog, Calibration, Discrete, Calibration, Weight Scale, and Calibration, Analyzer Single Component datasheets. You can select one of the following values:</p> <ul style="list-style-type: none"> • Percent of Range: When you select this value, the Calibration Error Limit field is enabled, and the Engineering Units Error Limit field is disabled. • Engineering Units: When you select this value, the Engineering Units Error Limit field is enabled, and the Calibration Error Limit field is disabled. |

| Field | Data Type | Description | Behavior and Usage |
|----------------------------|-----------|---|---|
| Event End Date | Date | The date on which the calibration event was completed. | In the datasheet, this field appears as a text box labeled Calibration End Date . If you perform a manual calibration, this field is populated with the date and time that the Calibration record was created. You can modify this value if needed. |
| Event ID | Character | The ID of the calibration event. | This field is disabled and populated with a default value. |
| Event Long Description | Character | Additional comments about the calibration event. | You can enter a description of the calibration event. |
| Event Start Date | Date | The date on which the calibration event is initiated. | This field is populated with the date and time that the Calibration was created. You can modify this value if needed. |
| Input Characteristic Curve | Character | The characteristics of the input signal to the instrument that you are calibrating. | This field contains the following values: <ul style="list-style-type: none"> • Linear • Percent • Square Root • None This field appears as a list that is populated by the MI_CHARACTERISTIC_CURVE System Code Table. |
| Location ID | Character | The physical location where you have performed the calibration. | You can enter a value manually. |
| Location Short Description | Character | A description of the location where you have performed the calibration. | You can enter a value manually. |
| Maintenance Type | Character | The type of maintenance performed by this calibration event. By default, this field contains the value Scheduled. | This field contains the following values: <ul style="list-style-type: none"> • Scheduled • Repair • Unscheduled • New Installation This field appears as a list that is populated by the MI_MAINTENANCE_TYPE System Code Table. |

| Field | Data Type | Description | Behavior and Usage |
|-----------------------------|-----------|--|---|
| Off Line Duration | Numeric | A number representing the amount of time in hours that passed between the time the calibration was initiated and the time that it was completed. | You can enter a value manually. |
| Output Characteristic Curve | Character | The type of output signal to the asset being calibrated. | This field contains the following values: <ul style="list-style-type: none"> • Linear • Percent • Square Root • None This field appears as a list that is populated by the MI_CHARACTERISTIC_CURVE System Code Table. |
| Overall AF Error Max | Numeric | A number that corresponds to the highest error value recorded from all the As Found values in all existing records in the current family. | This field is disabled and populated with the highest error value from all the As Found error values. If the calculated value contains more than six digits, it will be rounded. |
| Overall AF Pass/Fail | Character | A value that indicates whether the calibration has passed or failed based on whether the absolute value of Overall AF Error Max is in the range of Max Error Limit specified in the record. | This field is disabled and populated automatically. If the value in the Overall AF Error Max field is greater than the value stored in the Calibration Error Limit field, this value is Fail. Otherwise, this value is Pass. |
| Overall AL Error Max | Numeric | The highest error value recorded for all the As Left values in all the existing records in the Calibration family. | This field is disabled and populated with the highest error value from all the As Left error values. If the calculated value contains more than six digits, it will be rounded. |
| Overall AL Pass/Fail | Character | A value that indicates whether the calibration has passed or failed based on whether the absolute value of Overall AL Error Max is in the range of Max Error Limit specified in the Calibration. | This field is disabled and populated automatically. If the value in the Overall AL Error Max field is greater than the value stored in the Calibration Error Limit field, this value is Fail. Otherwise, this value is Pass. |

| Field | Data Type | Description | Behavior and Usage |
|--------------------|-----------|---|--|
| Calibration Result | Character | A value that indicates whether the Functional Test calibration has passed or failed. | <p>This field is disabled and populated automatically. This field is set to PASS, if the Response entered against each Calibration Result of a Functional Test calibration matches with Expected Response recorded in the Functional Test template detail record. Otherwise, this value is set to FAIL.</p> <p>Note:</p> <ul style="list-style-type: none"> This functionality gets enabled for each calibration result record if the corresponding template detail record's Validate check box is selected. Currently, in the Response Type drop-down menu, if you select Selection, you can record only one Expected Response in the Calibration Template, and the same is matched with the value of the Response 1 field in the Calibration Result. |
| Ramp Time | Numeric | The amount of time (in seconds) a device will take to move from one test point to another for pressure units. | <p>This field is disabled when the value in the Calibration Type field contains Fluke 74X.</p> <p>This field is populated by default with the value 30, as specified in the Ramp Time field in the Calibration Setup Defaults record.</p> <p>This field is required when the value in the Calibration Type field is Druck DPI620 (Genii) or Druck DPI61x.</p> |

| Field | Data Type | Description | Behavior and Usage |
|--|-----------|---|--|
| Repeat Count | Numeric | A value representing the number of test cycles to perform a calibration. | <p>You can enter a value in this field.</p> <p>This field is populated by default with the value 1, as specified in the Repeat Count field in the Calibration Setup Defaults record.</p> <p>This field is required when the value in the Calibration Type field is Druck DPI620 (Genii) or Druck DPI61x.</p> |
| Reset Set Point | Numeric | A value representing the point that the switch deactivates to its original state. | <p>You can enter a value in this field.</p> <p>This field is required when the value in the Calibration Type field is Druck DPI620 (Genii) or Druck DPI61x.</p> |
| Scheduled Calibration Date | Date | The date on which the calibration is scheduled to be performed. | You can set the date, if required. |
| Test Equipment Cal. Expire <Number> | Date | The date on which the certification of the test equipment expires. | This field appears as a text box labeled Calibration Expire and is populated with the value stored in the Next Certification field in the Test Equipment linked to this Calibration. |

| Field | Data Type | Description | Behavior and Usage |
|---|-----------|---|---|
| Test Equipment ID No <Number> | Character | The ID of the Test Equipment that is linked to the Calibration. | <p>This field appears as a text box labeled ID No.</p> <ul style="list-style-type: none"> If you select a Test Equipment that is certified, this field will be shaded green. If you select a Test Equipment that is not certified, a message appears, indicating that the Test Equipment is out of certification, and the field will be shaded red. <p>If you try to select the same Test Equipment more than once in the same Calibration, an error message appears.</p> <p>You cannot select a test equipment in case of automated calibration. This field will be automatically populated based on the device that is used to receive data.</p> |
| Test Equipment Last Cal. <Number> | Date | The date on which the test equipment was most recently certified. | This field appears as a text box labeled Last Calibration Date and is populated with the value stored in the Last Certification Date field in the Test Equipment that is linked to the Calibration. |
| Test Equipment Manufacturer <Number> | Character | The manufacturer of the test equipment. | This field appears as a text box labeled Manufacturer and is populated with the value stored in the Manufacturer field in the Test Equipment that is linked to this Calibration. |
| Test Equipment Model Number <Number> | Character | The model number of the test equipment. | This field appears as a text box labeled Model Number and is populated with the value stored in the Model Number field in the Test Equipment that is linked to the Calibration. |

| Field | Data Type | Description | Behavior and Usage |
|--|-----------|--|--|
| Test Equipment Serial Number <Number> | Character | The serial number of the test equipment. | This field appears as a text box labeled Serial Number and is populated with the value stored in the Serial Number field in the Test Equipment that is linked to the Calibration. |
| Test Equipment Status <Number> | Character | The certification status of the test equipment. | This field appears as a text box labeled Status and is populated with the value stored in the Certification Status field in the Test Equipment that is linked to the Calibration. |
| WO Reference (Event) | Character | The work order number associated with the calibration event. | You can enter a value manually. |

Calibration Result Records

Calibration Result records store information about the fields that are defined in the Calibration Event family. This topic provides an alphabetical list and description of the fields that exist for the Calibration Result family. The information in the table reflects the baseline state and behavior of these fields.

This family is enabled for site filtering, which means that records in this family can be assigned to a specific site and will only be accessible to users who are assigned to the same site and have the appropriate license and family privileges. For more information, refer to the [Sites](#) section of the documentation.

| Field | Data Type | Description | Behavior and Usage |
|--------------|-----------|---|--|
| AF Error | Numeric | A number that corresponds to the error value in percentage recorded from the As Found value. | This field is disabled and calculated based on the value in the As Found field. This field is displayed as AF Error (%) in the datasheet. |
| AF Pass/Fail | Character | A value that indicates whether the calibration has passed or failed based on whether the Overall AF Error Max value is less than or equal to the error limit. | This field is disabled and populated based on the value in the As Found Value field. If the value in the Overall AF Error Max field is greater than the value stored in the Calibration Error Limit field, the value in this field is Fail. Otherwise, it is Pass. |

| Field | Data Type | Description | Behavior and Usage |
|-----------------------------|-----------|---|---|
| AL Error | Numeric | A number that corresponds to the error value in percentage calculated from the As Left value. | This field is disabled and calculated based on the value in the As Left field. This field is displayed as AL Error (%) in the datasheet. |
| AL Pass/Fail | Character | A value that indicates whether the calibration has passed or failed based on whether the Overall AL Error Max value is less than or equal to the error limit. | This field is disabled and populated based on the value in the As Left value field. If the value in the Overall AL Error Max field is greater than the value stored in the Calibration Error Limit field, this value is Fail. Otherwise, this value is Pass. |
| As Found Value | Numeric | A number that indicates the As Found value of the calibration record. | You can enter a value manually. The field is automatically populated for automated calibration. It is displayed as AF Value in the datasheet. |
| As Left Value | Numeric | A number that indicates the As Left value of the calibration record. | You can enter this value manually. The value is auto-populated for the automated calibration. This field is displayed as AL Value in the datasheet. |
| Balance Content | Boolean | Indicates that the selected record is a balance component. | You can select the component that constitutes the remaining portion other than the main components in a calibration event. This field is applicable only for Multi-Component Analyzer. |
| Calibration Sequence Number | Numeric | A number that indicates the sequence for the calibration result record based on the selected strategy. | This field displays the sequence for the result. The field is displayed as Seq No. in the datasheet. |
| Component Name | Character | Indicates the name of the component. | This field provides the standard name of the calibration result. You can enter a new name for manual calibration. The field is displayed as Standard Name in the datasheet. It is applicable for Single Component Analyzer and Multi-Component Analyzer calibrations. |

| Field | Data Type | Description | Behavior and Usage |
|------------------------|-----------|--|--|
| Component Units | Character | The standard unit of measurement that is used to measure the Component. | <p>This field contains the following values:</p> <ul style="list-style-type: none"> Percentage (%) Parts Per Million (PPM) Parts Per Billion (PPB) <p>This field is displayed as Standard Unit(s) in the datasheet. It is applicable for Single Component Analyzer and Multi-Component Analyzer calibrations.</p> |
| Eng. Unit AF Error | Numeric | A number that indicates the exact value of the As Found Error in the respective engineering units. | This field appears for analog, discrete, single component analyzer, and weight scale calibrations. This field appears only if the value in the Error Assessment field in the Calibration record is Engineering Units. The value is automatically calculated for analog and discrete calibrations. |
| Eng. Unit AL Error | Numeric | A number that indicates the exact value of the As Left Error in the respective engineering units. | This field appears for analog, discrete, single component analyzer, and weight scale calibrations. This field appears only if the value in the Error Assessment field in the Calibration record is Engineering Units. The value is automatically calculated for analog and discrete calibrations. |
| Event ID | Character | The ID of the calibration event. | This field is populated with a system-generated value. |
| Input Measure AF | Numeric | A number that indicates the primary As Found input value of the record. | This field is automatically populated. You can, however, modify the value in this field. |
| Input Measure AL | Numeric | A number that indicates the primary As Left input value of the record. | This field is automatically populated. You can, however, modify the value in this field. |
| Input Up/Dn | Character | Indicates the direction of test points of the calibration. | This field appears as Up/Dn in the datasheet. |
| Percentage of scale TP | Numeric | The percentage of scale for each test point calculated based on the strategy. | This field appears as % Scale in the datasheet. |

| Field | Data Type | Description | Behavior and Usage |
|-------------------|-----------|---|--|
| Pri Output AF | Numeric | A number that indicates the primary As Found output value measured for calibration. | This field is automatically populated and disabled in case of automated calibration. You can enter a value for manual calibration. |
| Primary Output AL | Numeric | A number that indicates the primary As Left output value measured for calibration. | This field is automatically populated and disabled in case of automated calibration. You can enter a value for manual calibration. |
| Standard Value | Numeric | The expected value of the component. | This field provides the standard value of the component. You can enter a new value for manual calibration. This field is applicable for Single Component Analyzer and Multi-Component Analyzer calibrations. |

Calibration Setup Defaults Records

Calibration Setup Defaults records are used to store information about the default field values in Calibration Template families. This topic provides an alphabetical list and description of the fields that exist for the Calibration Setup Defaults family and appear on the Template Setup Defaults datasheet. The information in the table reflects the baseline state and behavior of these fields. This list is not comprehensive.

| Field | Data Type | Description | Behavior and Usage |
|------------------------------|-----------|--|--|
| Analog Error Limit | Numeric | The maximum amount of error in percentage that is allowed in an analog calibration. | The value in this field is used to populate the Max Error Limit field in a Calibration Template, Analog record. |
| Default Pressure Units | Character | The input and output units of measure (UOMs) for pressure in analog and discrete calibrations. | The value in this field is used to populate the Default Pressure Units field in Calibration Template, Analog and Calibration Template, Discrete records if the value in the Input Type and Output Type fields is Pressure. |
| Default Temperature Standard | Character | The temperature standard used in an analog calibration. | The value in this field is used to populate the Temperature Standard field in a Calibration Template, Analog record. |

| Field | Data Type | Description | Behavior and Usage |
|---------------------------|-----------|---|--|
| Default Temperature Units | Character | The input and output UOMs for temperature in analog and discrete calibrations. | The value in this field is used to populate the Default Temperature Units field in Calibration Template, Analog and Calibration Template, Discrete records if the value in the Input Type and Output Type fields is Temperature. |
| Discrete Error Limit | Numeric | The maximum amount of error, in percentage, that is allowed in a discrete calibration. | The value in this field is used to populate the Max Error Limit field in a Calibration Template, Discrete record. |
| Discrete Max Deadband | Numeric | The upper range value of deadband that is allowed in a discrete calibration. | The value in this field is used to populate the Specified Maximum Dead Band Switch 1 and Specified Maximum Dead Band Switch 2 fields in a Calibration Template, Discrete record. |
| Discrete Min Deadband | Numeric | The lower range value of deadband that is allowed in a discrete calibration. | The value in this field is used to populate the Specified Minimum Dead Band Switch 1 and Specified Minimum Dead Band Switch 2 fields in a Calibration Template, Discrete record. |
| Error Assessment | Character | The maximum amount of error in engineering units that is allowed in a discrete calibration. | The value in this field is used to populate the Engineering Units Error Limit field in a Calibration Template, Discrete record. |
| Input Damping Setting | Character | Indicates whether input damping is on or off. | The value in this field is used to populate the Input Damping Setting field in Calibration Template, Analog and Calibration Template, Discrete records. |
| Input Increment | Numeric | The incremented source value in an automated calibration. | The value in this field is used to populate the Input Increment field in Calibration Template, Analog and Calibration Template, Discrete records. |

| Field | Data Type | Description | Behavior and Usage |
|-------------------------|-----------|--|--|
| Input Min Max Mode | Character | Indicates whether input min max mode is on or off. | The value in this field is used to populate the Input Min Max Mode field in Calibration Template, Analog and Calibration Template, Discrete records. |
| Input Ref Temp Source | Character | The internal temperature reference in an automated calibration. | The value in this field is used to populate the Input Ref Temp Source field in Calibration Template, Analog and Calibration Template, Discrete records. |
| Input Simulation Delay | Numeric | The per-step delay, in milliseconds, after the input simulation is updated to compensate for settling and lag. | The value in this field is used to populate the Input Simulation Delay field in Calibration Template, Analog and Calibration Template, Discrete records. |
| MC Analyzer Error Limit | Numeric | The maximum percentage of error that is allowed in a multi-component analyzer calibration. | The value in this field is used to populate the Max Error Limit field in a Calibration Template, Multi-Component Analyzer record. |
| Output Damping Setting | Character | Indicates whether output damping is on or off. | The value in this field is used to populate the Output Damping Setting field in Calibration Template, Analog and Calibration Template, Discrete records. |
| Output Ref Temp Source | Character | The external temperature reference in an automated calibration. | The value in this field is used to populate the Output Ref Temp Source field in Calibration Template, Analog and Calibration Template, Discrete records. |
| Ramp Time | Numeric | The ramp time, in seconds, in a discrete calibration. | This field is disabled for Fluke devices. The value in this field is used to populate the Ramp Time field in a Calibration Template, Discrete record. |
| Repeat Count | Numeric | The number of test cycles to perform a discrete calibration. | The value in this field is used to populate the Repeat Count field in a Calibration Template, Discrete record. |

| Field | Data Type | Description | Behavior and Usage |
|--------------------------|-----------|--|--|
| SC Analyzer Error Limit | Numeric | The maximum error limit that is allowed in a single component analyzer and a multi-component analyzer calibration. | The value in this field is used to populate Max Error Limit field in the Calibration Template, Multi-Component Analyzer and Calibration Template, Single Component Analyzer records. |
| Validate Deadband | Boolean | Indicates whether or not you want the GE Digital APM system to consider the deadband range values to determine if a discrete calibration has passed or failed. | The value in this field is used to populate the Validate Deadband field in the Calibration Template, Discrete record. |
| Weight Scale Error Limit | Numeric | The maximum amount of error, in percentage, that is allowed in a weight scale calibration. | The value in this field is used to populate the Max Error Limit field in a Calibration Template, Weight Scale record. |

Calibration Strategy Records

Calibration Strategy records store information about the fields that are defined in the Calibration Strategy family in the baseline GE Digital APM database. This topic provides an alphabetical list and description of the fields that exist for the Calibration Strategy family and appear on the Calibration Strategy datasheet. The information in the table reflects the baseline state and behavior of these fields. This list is not comprehensive.

This family is not enabled for site filtering, which means that records in this family can be accessed by any user with the appropriate license and family privileges. For more information, refer to the [Sites](#) section of the documentation.

| Field | Data Type | Description | Behavior and Usage |
|---------------|-----------|---|---|
| Down Count | Numeric | The number of records in the Down value range of the test point for a calibration strategy. | <p>You can enter a value manually.</p> <p>For GE Druck documenting process calibrators, the sum of the value in the Down Count and Up Count fields should not exceed 21 test points.</p> <p>This field is required only if the Template Type field contains at least one of the following:</p> <ul style="list-style-type: none"> • Analog Calibration • Single Component Analyzer • WeightScale Calibration |
| Strategy ID | Character | The ID of the calibration strategy | <p>You can enter a value manually. The value must be unique.</p> <p>This field is required.</p> |
| Strategy Name | Character | The name of the calibration strategy | <p>You can enter a value manually.</p> <p>This field is required.</p> |

| Field | Data Type | Description | Behavior and Usage |
|---------------|-----------|---|---|
| Template Type | Character | The type of calibration template. | <p>This field appears as a list and contains the following Calibration templates:</p> <ul style="list-style-type: none"> • Analog Calibration • Discrete Calibration • Multi-Component Analyzer • Single Component Analyzer • WeightScale Calibration • Functional Test <p>This field is required.</p> |
| Up Count | Numeric | The number of records in the Up value range of the test point for a calibration strategy. | <p>You can enter a value manually.</p> <p>For GE Druck documenting process calibrators, the sum of the value in the Down Count and Up Count fields should not exceed 21 test points.</p> <p>This field is required only if the Template Type field contains at least one of the following:</p> <ul style="list-style-type: none"> • Analog Calibration • Single Component Analyzer • WeightScale Calibration |

Calibration, Summary Event Records

Calibration, Summary Event records store information about the fields that are defined in the Calibration, Summary Event family in the baseline GE Digital APM database. This topic describes the fields that appear on the Calibration, Summary Event datasheet. The information in the table reflects the baseline state and behavior of these fields. Refer to the [Calibration Records](#) section for other fields that are not listed here.

This family is enabled for site filtering, which means that records in this family can be assigned to a specific site and will only be accessible to users who are assigned to the same site and have the appropriate license and family privileges. For more information, refer to the [Sites](#) section of the documentation.

| Field | Data Type | Description | Behavior and Usage |
|-------------------------|-----------|---|--|
| Asset ID | Character | Instrumentation System Asset ID | This field displays the ID of the asset linked to the Instrumentation System. The asset can be either Equipment or Functional Location. This is a read-only field. |
| Calibration Template ID | Character | Calibration Template linked to the Instrumentation System's asset. | This field is used to provide calibration steps to create a Summary Event. This field is read-only and is not a mandatory field. |
| Calibration Task ID | Character | Calibration Task linked to the Instrumentation System's asset. | This field is used to indicate the Calibration Task that is linked to the Instrumentation System's asset. This field is read-only and is not a mandatory field. |
| Ad-Hoc Calibration | Boolean | Indicates that the calibration is performed on the asset that needs to be calibrated outside of its calibration schedule. For example, suppose an asset has an annual calibration task in January. If the asset needs repair or replacement during the year, the asset should be calibrated after it is repaired or replaced. An ad-hoc calibration is performed in this scenario. | By default, this check box is cleared. If you select this check box, the associated Calibration Task is not recycled after you perform the calibration. |
| Overall AF Pass/Fail | Character | A value that indicates whether the calibration has passed or failed based on Overall AF Pass/Fail values of the underlying child calibration events. | This field is used to indicate the Calibration Result of the Instrumentation System. This is a read-only field. This field is set to PASS if the Overall AF Pass/Fail for all the child events is set to PASS . This field is set to FAIL if the Overall AF Pass/Fail for any of the child events is set to FAIL . |
| Overall AL Pass/Fail | Character | A value that indicates whether the calibration has passed or failed based on the Overall AL Pass/Fail values of the underlying child calibration events. | This field is used to indicate the Calibration Result of the Instrumentation System. This is a read-only field. This field is set to PASS if the Overall AL Pass/Fail for all child events is set to PASS . This field is set to FAIL if the Overall AL Pass/Fail of any of the child events is set to FAIL . |

Calibration Task Records

Calibration Task records store details about a calibration task that you should perform. Specifically, these records store scheduled dates for the next time calibrations should be performed.

This family is enabled for site filtering, which means that records in this family can be assigned to a specific site and will only be accessible to users who are assigned to the same site and have the appropriate license and family privileges. For more information, refer to the [Sites](#) section of the documentation.

This topic provides an alphabetical list and description of the fields that exist for the Calibration Task family. The information in the table reflects the baseline state and behavior of these fields. The list is limited, however, to details that are specific to Calibration Tasks. If a field in the Calibration Task family works the same way as it does in the root Task family, that field is excluded from the table.

| Field | Data Type | Description | Behavior and Usage |
|-------------------------|-----------|---|---|
| Calibration Template ID | Character | The ID of the Calibration Template that is linked to this Calibration Task. | This field is disabled and will contain the ID of the Calibration Template when you link a task to the Calibration Template. |
| Call Horizon | Numeric | This field along with Next Date is used in the scheduler for work order or notification generation to determine the schedule for work order or notification generation. | GE Digital APM system performs a calculation on the Next Date and Call Horizon values in all Task records. The calculated result is passed into the query Get Tasks for Work Order Generation. If the result meets the criteria defined for the query column ([Task].[Next Date] - [Task].[Call Horizon]), the Task record meets the remaining criteria defined in the query. If the Task does not already contain a value in the Work Order Number field, an order will be created from the Task record. |
| Desired Interval | Numeric | A number indicating how often the task should be completed. | This number must be between the Min Interval and Max Interval values. Before you can save a value in this field, the Last Date field must contain a value. The next date is calculated automatically using both the last date and desired interval. The units that you select for the desired interval are also applicable to the Max Interval and Min Interval. |

| Field | Data Type | Description | Behavior and Usage |
|-----------------|-----------|---|---|
| EAM Object Type | Character | Includes the Work Order, Notification, and No Action options; it is populated from the EAM Object Type system code. The default option is Work Order. | <p>This field will have the Work Order, Notification, and No Action options. It is populated from the EAM Object Type system code. The default option is Work Order.</p> <p>Based on the selection of this field, Work Order and Notification fields are enabled and disabled.</p> <p>This field decides whether a newly created task is of the Work Order type or Notification type.</p> |
| Last Date | Date | The date on which the associated Calibration Event is closed. | <p>By default, this field contains the date on which the Calibration Task is created.</p> <p>After you close the Calibration Event linked to this Calibration Task, this field is disabled and populated with the date on which the Calibration Event is closed.</p> <p>This value is also populated in the Date Executed field in the Task Execution record that is linked to this Calibration Task.</p> |
| Max Date | Date | The latest date by which you must perform the calibration task. | <p>This field is disabled and calculated as follows:</p> $\text{Max Date} = \text{Last Date} + \text{Max Interval}$ |
| Max Interval | Numeric | <p>The maximum interval to perform the calibration task.</p> <p>For example, if the value in this field is 30 days, it implies that you must perform the calibration task within 30 days from the day you last performed this task.</p> | You can enter a value manually. |
| Min Date | Date | The earliest date on which you can perform the calibration task if it is a recurring task. | <p>This field is disabled and calculated as follows:</p> $\text{Min Date} = \text{Last Date} + \text{Min Interval}$ |

| Field | Data Type | Description | Behavior and Usage |
|---------------------|-----------|---|--|
| Min Interval | Numeric | The minimum interval to perform the calibration task. For example, if the value in this field is 15 days, it implies that you must perform the calibration task after 15 days from the day you last performed this task. | You can enter a value manually. |
| Modifiable | Boolean | Indicates whether the Calibration Task can be modified. | This check box can be cleared or selected by: <ul style="list-style-type: none"> A Security User with Update and Insert privileges to the Task family. <p>-or-</p> <ul style="list-style-type: none"> A member of the MI Calibration Administrator Security Group. <p>If you clear this check box, all the fields other than the following are disabled:</p> <ul style="list-style-type: none"> Task State Task Assigned To Route Number Reoccurring <p>If you modify the value in any of the fields in the preceding list, the Modifiable check box is automatically selected. At that point, you can modify the fields that were previously disabled.</p> |
| Next Date | Date | The suggested date by when you must perform the calibration task. For example, if the value in this field is 20 days, it is suggested that you perform the calibration task after 20 days from the day you last performed this task. | This field is disabled and calculated as follows: Next Date = Last Date + Desired Interval |
| Notification Number | Character | Populates the notification number from the EAM system. | Populates the notification number from the EAM system. This field is always disabled. |

| Field | Data Type | Description | Behavior and Usage |
|-------------------------|-----------|---|---|
| Notification Type | Character | Populates the notification type from the system code and determines the type of notification. | Populates the notification type from the system code and determines the type of notification. The default value is M2. |
| Operation Number | Character | Populates the operation number coming from the EAM system. | N/A |
| Rejectable | Boolean | Indicates whether the Calibration Task can be rejected. | By default, this check box is cleared, which means you cannot reject the Calibration Task. |
| Related Entity ID | Character | The ID of the Asset that is linked to the Calibration Task. | This field is disabled and populated automatically with the ID of the asset that is linked to the Calibration Task. |
| Reoccurring | Boolean | Indicates whether the task is recurring. | You can select the check box if you want the calibration task to recur. |
| Route Number | Character | A value that represents a route or group of tasks. | You can use this field in a query to access the tasks that are assigned to a particular route or group of tasks. |
| Task Assigned To | Character | The name of the person who has been assigned the task. | You can enter a value manually. |
| Task Description | Character | A description for the task that you should perform. | You can enter a value manually. |
| Task ID | Character | The ID for the task. | This field must be unique. |
| Task List Group | Character | Populates the Task List Group number coming from the EAM system. | N/A |
| Task List Group Counter | Character | Populates the Task List Group counter coming from the EAM system. | N/A |
| Task List Link | Character | Populates the Task List Link counter coming from the EAM system. | N/A |
| Task List Type | Character | Populates the Task List Type counter coming from the EAM system. | N/A |

| Field | Data Type | Description | Behavior and Usage |
|------------------------------|-----------|---|--|
| Task State | Character | The state associated with the Calibration Task. By default this field contains the value Proposed. | This field contains a list of states. After you save a new Calibration Task, this value is changed automatically from Proposed to Scheduled without change. |
| Task Type | Character | The type of task. By default, this field contains the value CALIBRATION. | This field contains a list of values from the Task Type family that correspond to types of calibrations (e.g., CALIBRATION: AUTOMATED, ANALOG, 11 UP/DN, LINEAR, DCV/DCV). You can select a value other than the default one. |
| Unconstrain Min/Max Dates | Boolean | Indicates whether you can override the next date. | When you select this check box, the values in the Min Date and Max Date fields are cleared. |
| User Status for Notification | Character | Populates from the User Status for Notification system code. It stores the value selected, which will determine the status that the user wants to pass to the SAP object on creation. | This field contains the list of user status values to be sent to the EAM system. This is disabled when the value of the EAM object type is not Notification. |
| User Status for Work Order | Character | Populates from the User Status for Work Order system code. It stores the value, which will determine the status that the user wants to pass to the SAP object on creation. | This field populates from the User Status for Work Order system code. This field stores the value, which will determine the status that the user wants to pass to the SAP object on creation. This is not a mandatory field. |
| Work Order Number | Character | Populates the work order number coming from the EAM system. | It is disabled so you can edit the work order type. |
| Work Order Type | Character | Populates from the Work Order Type system code and determines the type of work order. | It will be disabled when the EAM object type is not Work Order. |

Calibration Task Scope Records

Calibration Task Scope records stores information about the defined task scope of an Instrumentation System's Calibration Task. One Instrumentation System can have one or more Calibration Tasks and each task is linked to a Calibration Task Scope record.

Calibration Task Scope records are not displayed to users. These records are maintained in the backend to track the task scope of the Calibration Task in an Instrumentation System.

This family is not enabled for site filtering, which means that records in this family can be accessed by any user with the appropriate license and family privileges. For more information, refer to the [Sites](#) section of the documentation.

The following fields are associated with this record.

| Field | Data Type | Description | Behavior and Usage |
|-------------------------------|-----------|---|---|
| Calibration Task Scope ID | Character | A unique ID to maintain the task scope records. | N/A |
| Calibration Summary Event Key | Character | Stores the entity key of the Calibration, Summary Event record, which is linked to the Instrumentation System's parent asset. | N/A |
| Calibration Task Scope Status | Boolean | Stores either Y or N to indicate whether the current task scope is in active state. | This field is set to Y when the task scope is created, and N when the Calibration Task is recycled. On recycling the task, a new task scope record is created. |
| Scope Created Date | Date Time | Sets the current date and time when the task scope record is created, | N/A |
| Scope Closed Date | Date Time | Sets the current date and time when the Calibration Task is recycled. | N/A |

Calibration Task Scope Detail Records

The Calibration Task Scope Detail records store child assets, their applied templates, and calibration event key values to indicate that they are part of the current task scope. A record is created when you select the templates and save the task scope of the selected Calibration Task.

Calibration Task Scope Detail records are not displayed to users. These records are maintained in the backend to track the task scope details of the Calibration Task in an Instrumentation System.

This family is not enabled for site filtering, which means that records in this family can be accessed by any user with the appropriate license and family privileges. For more information, refer to the [Sites](#) section of the documentation.

The following fields are associated with this record.

| Field | Data Type | Description | Behavior and Usage |
|--------------|-----------|---|---|
| Asset Key | Character | Entity key of the child asset. | Entity key of the child asset stored in the current task scope defined for the Calibration Task. When the asset is removed from Instrumentation System, the complete record where this Asset Key is present is removed from the Calibration Task Scope Detail table. |
| Template Key | Character | Stores the entity key of the Calibration, Summary Event record, which is linked to the Instrumentation System's parent asset. | Entity key of the calibration template linked to the child asset. This key is stored in the current task scope defined for the Calibration Task. This field is cleared from the Calibration Task Scope Detail table when you clear this template from the task scope. |
| Event Key | Character | Stores either Y or N to indicate whether the current task scope is in active state. | Entity key of the Calibration Event linked to the child asset. This key is stored in the current task scope defined for the Calibration Task. This field is cleared from the Calibration Task Scope Detail table when you remove the asset or delete this calibration event. |

Calibration Template, Analog Records

Calibration Template, Analog records store details on the analog calibration that should be performed for a specific asset. This topic provides an alphabetical list and description of the fields that exist for the Calibration Template, Analog family. The information in the table reflects the baseline state and behavior of these fields. This list is not comprehensive.

This family is enabled for site filtering, which means that records in this family can be assigned to a specific site and will only be accessible to users who are assigned to the same site and have the appropriate license and family privileges. For more information, refer to the [Sites](#) section of the documentation.

| Field | Data Type | Description | Behavior and Usage |
|----------------------|-----------|--|--|
| Asset Key | Numeric | The Entity Key of the Asset to which the Calibration Template is linked. This field is used by the GE Digital APM system, and should not be modified. | This field does not appear on a datasheet by default. When you apply a Calibration Template to an Asset, the details of the Asset are retrieved based on the value in the Asset Key field. |
| Calibration Strategy | Character | The strategy for the analog calibration. | <p>This field contains a list of strategies for the analog calibration. This field is required. You can choose from the following strategies:</p> <ul style="list-style-type: none"> • 2 Up • 2 Down • 2 Up then 2 Down • 3 Up • 3 Down • 3 Up then 3 Down • 5 Up • 5 Down • 5 Up then 5 Down • 5 Up then 1 Down • 11 Up • 11 Down • 11 Up then 11 Down <p>These values are defined in the MI_CALIBRATION_STRATEGIES System Code Table. After you save the Calibration Template, Analog record, this field is disabled.</p> |
| Calibration Type | Character | The type of calibration for which you are creating the template. | <p>This field is disabled and populated based on the type of template that you selected on the Profile Template page, this field is populated with one of the following values:</p> <ul style="list-style-type: none"> • If you selected FLUKE 74X on the Mappings page, then the Calibration Type field contains the value FLUKE 74X. • If you selected Druck DPI620 (Genii) on the Mappings page, then the Calibration Type field contains the value Druck DPI620 (Genii). • If you selected Druck DPI61x on the Mappings page, then the Calibration Type field contains the value Druck DPI61x. • If you selected CMX on the Mappings page, then the Calibration Type field contains the value CMX. • If you selected Manual Templates, then the Calibration Type field contains the value Analog - Manual. When this option is selected, the fields on the Automated Calibration Parameters section are disabled. |

| Field | Data Type | Description | Behavior and Usage |
|---------------------------------|-----------|--|---|
| Custom Input Lower Range | Numeric | A number representing the lower range value for the custom input range. | <p>This field appears on the datasheet as a text box labeled Low, and is grouped with the following other fields in the Custom Input Details subsection:</p> <ul style="list-style-type: none"> • Custom Input Upper Range • Custom Input Range UOM <p>This field is enabled and required only when the Custom Input Values check box is selected.</p> |
| Custom Input Range UOM | Character | The units of measure for the custom input range. | <p>This field appears on the datasheet as a list labeled UOM, and is grouped with the following other fields in the Custom Input Details subsection:</p> <ul style="list-style-type: none"> • Custom Input Lower Range • Custom Input Upper Range <p>If the Calibrator Type field contains the value Druck DPI620 (Genii) or Druck DPI61x, then this list is filtered by the value that you select in the Input Type field.</p> <p>This field is enabled and required only when the Custom Input Values check box is selected. This field appears as a list that is populated by the MI_CALIBRATION_IO_TYPES System Code Table.</p> |
| Custom Input Upper Range | Numeric | A number representing the upper range value for the custom input range. | <p>This field appears on the datasheet as a text box labeled High, and is grouped with the following other fields in the Custom Input Details subsection:</p> <ul style="list-style-type: none"> • Custom Input Lower Range • Custom Input Upper Range <p>This field is enabled and required only when the Custom Input Values check box is selected.</p> |
| Custom Input Values | Boolean | Indicates that you will enter custom input values for the calibration. | <p>This field is enabled only when the value stored in the Calibration Type field is FLUKE 74X. When you select the Custom Input Values check box:</p> <ul style="list-style-type: none"> • The following fields are enabled: <ul style="list-style-type: none"> ◦ Custom Input Lower Range ◦ Custom Input Upper Range ◦ Custom Input Range UOM • The Manual Entered Input Values check box is automatically selected and disabled. |
| Custom Output Lower Range Value | Numeric | A number representing the lower range value for the custom output range. | <p>This field appears on the datasheet as a text box labeled Low, and is grouped with the following other fields in the Custom Output Details subsection:</p> <ul style="list-style-type: none"> • Custom Output Upper Range • Custom Output Range UOM <p>This field is enabled and required only when the Custom Input Values check box is selected.</p> |

| Field | Data Type | Description | Behavior and Usage |
|---------------------------------|-----------|--|---|
| Custom Output Range UOM | Character | The units of measure for the custom output range. | <p>This field appears on the datasheet as a list labeled UOM, and is grouped with the following other fields in the Custom Output Details subsection:</p> <ul style="list-style-type: none"> • Custom Output Lower Range • Custom Output Upper Range <p>If the Calibrator Type field contains the value Druck DPI620 (Genii) or Druck DPI61x, then this list is filtered by the value that you select in the Output Type field.</p> <p>This field is enabled and required only when the Custom Input Values check box is selected. This field appears as a list that is populated by the MI_CALIBRATION_IO_TYPES System Code Table.</p> |
| Custom Output Upper Range Value | Numeric | A number representing the upper range value for the custom output range. | <p>This field appears on the datasheet as a text box labeled High, and is grouped with the following other fields in the Custom Output Details subsection:</p> <ul style="list-style-type: none"> • Custom Output Lower Range • Custom Output Range UOM <p>This field is enabled and required only when the Custom Input Values check box is selected.</p> |
| Custom Output Values | Boolean | Indicates whether you will enter custom output values for the calibration. | <p>This field is enabled only when the value stored in the Calibration Type field is FLUKE 74X. When you select the Custom Output Values check box:</p> <ul style="list-style-type: none"> • The following fields are enabled: <ul style="list-style-type: none"> ◦ Custom Output Lower Range ◦ Custom Output Upper Range ◦ Custom Output Range UOM • The Manual Entered Input Values check box is automatically selected and disabled. |

| Field | Data Type | Description | Behavior and Usage |
|-------------------|-----------|--|---|
| Device Input UOM | Character | The Input unit of measure to be used by the device. | <p>This field is grouped with the following other fields in the Primary Input Details section:</p> <ul style="list-style-type: none"> • Primary Input LRV • Primary Input URV • Primary Input Range Units <p>This list contains a list of UOMs that are filtered based on the value in the Input Type field and the Calibration Type field. This means that only the UOM values that are relevant for that input type and calibration type will appear in the list.</p> <p>This field uses the following system code tables to display the UOMs in the list:</p> <ul style="list-style-type: none"> • Pressure: FLUKE PRESSURE BASE UOM • Temperature: FLUKE TEMPERATURE BASE UOM • Voltage: FLUKE VOLTAGE BASE UOM • Current: FLUKE CURRENT BASE UOM • Frequency: FLUKE FREQUENCY BASE UOM • Resistance: FLUKE RESISTANCE BASE UOM • Other: CALIBRATION UOM GENERAL <p>Note: If this field is empty, then the default UOM for Primary Input Range Units as listed in Calibration Unit of Measurements (UOMs) and their Conversions section gets downloaded to the Calibrator.</p> |
| Device Output UOM | Character | The Output unit of measure to be used by the device. | <p>This field is grouped with the following other fields in the Primary Output Details section:</p> <ul style="list-style-type: none"> • Primary Output LRV • Primary Output URV • Primary Output Units <p>This list contains a list of UOMs that are filtered based on the value in the Output Type field and the Calibration Type field. This means that only the UOM values that are relevant for that output type and calibration type will appear in the list.</p> <p>This field uses the following system code tables to display the UOMs in the list:</p> <ul style="list-style-type: none"> • Pressure: FLUKE PRESSURE BASE UOM • Temperature: FLUKE TEMPERATURE BASE UOM • Voltage: FLUKE VOLTAGE BASE UOM • Current: FLUKE CURRENT BASE UOM • Frequency: FLUKE FREQUENCY BASE UOM • Resistance: FLUKE RESISTANCE BASE UOM • Other: CALIBRATION UOM GENERAL <p>Note: If this field is empty, then the default UOM for Primary Output Range Units as listed in Calibration Unit of Measurements (UOMs) and their Conversions section gets downloaded to the Calibrator.</p> |

| Field | Data Type | Description | Behavior and Usage |
|-------------------------------|-----------|--|---|
| Engineering Units Error Limit | Numeric | A number representing the maximum amount of error in engineering units that is allowed before a calibration event is considered failed. | <p>The state of this field depends on the state of other fields.</p> <ul style="list-style-type: none"> If the Error Assessment field in the Calibration Setup Defaults record contains the value Engineering Units, this field is populated with a default value from the Calibration Setup Defaults record. If the Error Assessment field in the Calibration Setup Defaults record contains the value Percentage of Scale, this field is disabled and blank. <p>You can modify the default value if required. This field is required.</p> |
| Error Assessment | Character | The error calculation type that you will use to enter the calibration results. | <p>This field is populated with a default value from the Calibration Setup Defaults record. You can select one of the following values:</p> <ul style="list-style-type: none"> Percent of Range: When you select this value, the Max Error Limit field is enabled, and the Engineering Units Error Limit field is disabled. Engineering Units: When you select this value, the Engineering Units Error Limit field is enabled, and the Max Error Limit field is disabled. |
| Input Damping Setting | Character | Indicates whether this setting should be on or off. When this field is set to on, the calibrator utilizes a secondary setting of damping time. This is applicable only to automated calibrations, and provides a delay between step changes that are applied to the device being calibrated. | <p>This field appears as a list, and contains the following options:</p> <ul style="list-style-type: none"> on off <p>This field is populated with a default value, as specified in the Input Damping Setting field in the Calibration Setup Defaults record.</p> <p>This field appears as a list that is populated by the MI_STATUS System Code Table.</p> |
| Input Min Max Mode | Character | Indicates whether this setting should be on or off. When this field is set to on, the calibrator will store the Min and Max output values of the device being calibrated. This is applicable only to automated calibrations. | <p>This field appears as a list, and contains the following options:</p> <ul style="list-style-type: none"> on off <p>This field is populated with a default value, as specified in the Input Min Max Mode field in the Calibration Setup Defaults record.</p> <p>This field appears as a list that is populated by the MI_STATUS System Code Table.</p> |

| Field | Data Type | Description | Behavior and Usage |
|------------|-----------|--|--|
| Input Type | Character | The input type for the analog calibration. | <p>This field appears as a list that is populated by the MI_CALIBRATION_IO_TYPES System Code Table. This field is required.</p> <p>The options that appear in the list depend on the value stored in the Calibration Type field.</p> <p>If the value in the Calibration Type field is Druck DPI620 (Genii), then you can choose from the following options:</p> <ul style="list-style-type: none"> • Pressure • Temperature • Voltage • Current • Frequency • Resistance <p>If the value in the Calibration Type field is Druck DPI61x, then you can choose from the following options:</p> <ul style="list-style-type: none"> • Pressure • Voltage • Current <p>If the value in the Calibration Type field is FLUKE 74X, then you can choose from the following options:</p> <ul style="list-style-type: none"> • Pressure • Temperature • Voltage • Current • Frequency • Resistance • Other <p>If the value in the Calibration Type field is Analog-Manual, then you can choose from the following options:</p> <ul style="list-style-type: none"> • Pressure • Temperature • Flow • Level • Weight • Voltage • Current • Frequency • Resistance • Other <p>Only pressure input values can be used with automated calibrations.</p> |

| Field | Data Type | Description | Behavior and Usage |
|-----------------------------|-----------|---|--|
| Linear TC LRV | Numeric | A number representing the lower value on the linear thermocouple range. | <p>This field is enabled only when the TC Linear check box is selected. This field is populated automatically with values from the following fields, based on the value that exists in the Output Type field and the Input Type field:</p> <ul style="list-style-type: none"> Primary Input Range LRV, if the value in the Output Type field is not Temperature and the value in the Input Range field is Temperature. Primary Output Range LRV, if the value in the Output Type field is Temperature. |
| Linear TC URV | Numeric | A number representing upper value on the linear thermocouple range. | <p>This field is enabled only when the TC Linear check box is selected. This field is populated with values from the following fields based on the value that exists in the Output Type field:</p> <ul style="list-style-type: none"> Primary Input Range URV, if the value in the Output Type field is not Temperature and the value in the Input Range field is Temperature. Primary Output Range URV, if the value in the Output Type field is Temperature. |
| Loop Power | Character | A value that indicates the source of the loop power. | <p>If the value in the Calibration Type field is FLUKE 74X, then this field contains the following values:</p> <ul style="list-style-type: none"> Disabled: The loop power is supplied by the calibrator device. Enabled_24V: The loop power is supplied by a 24V DC power supply. Enabled_28V: The loop power is supplied by a 28V DC power supply. <p>If the value in the Calibration Type field is Druck DPI620 (Genii) or Druck DPI61x, then this field contains the following values:</p> <ul style="list-style-type: none"> Yes: The loop power is supplied by an external source. No: The loop power is supplied by the calibrator device. <p>If the value stored in the Calibration Type field is Analog-Manual, then this field is disabled.</p> <p>This field appears as a list that is populated by the MIL_POWER_SOURCE System Code Table.</p> |
| Manual Entered Input Values | Boolean | Indicates whether you will manually enter the input value into the device during the automated calibration. | <p>This check box is cleared by default. Selecting this check box indicates that you will manually enter the input value into the calibrator during automated calibration.</p> <p>The state of this field is dependent upon the state of other fields. Specifically, this check box is:</p> <ul style="list-style-type: none"> Enabled only when the value stored in the Calibration Type field is FLUKE 74X. Disabled and selected if the Custom Input Values check box is selected. Disabled if the Performs Square Root field contains the value Yes (Y). |

| Field | Data Type | Description | Behavior and Usage |
|------------------------------|-----------|---|--|
| Manual Entered Output Values | Boolean | Indicates whether you will manually enter the output value into the device during the automated calibration. | <p>This check box is cleared by default. Selecting this check box indicates that you will manually enter the output value into the calibrator during automated calibration.</p> <p>The state of this field is dependent upon the state of other fields. Specifically, this check box is:</p> <ul style="list-style-type: none"> Enabled only when the value stored in the Calibration Type field is FLUKE 74X. Selected and disabled if the Custom Output Values check box is selected. |
| Manufacturer | Character | The manufacturer of the Asset that is linked to the Calibration Template. | This field is disabled and populated with the value stored in the Manufacturer field in the Asset that is linked to the Calibration Template. If you have accessed the template from the library, this field is disabled and blank. |
| Max Error Limit | Numeric | A number representing the maximum amount of error in percent that is allowed before a calibration event is considered failed. | <p>The state of this field depends on the state of other fields.</p> <ul style="list-style-type: none"> If the Error Assessment field in the Calibration Setup Defaults record contains the value Engineering Units, in case of manual calibration, this field is disabled and blank. <p>In case of automated calibration, this field is disabled and populated based on the values in the Primary Input Range and the Engineering Units Error Limit fields, using the following calculation:</p> $(\text{Engineering Units Error Limit}) / (\text{URV} - \text{LRV}) \times 100$ <p>...where:</p> <ul style="list-style-type: none"> <Engineering Units Error Limit> is the value in the Engineering Units Error Limit field. <URV> is the value in the Primary Input Range URV field. <LRV> is the value in the Primary Input Range LRV field. <ul style="list-style-type: none"> If the Error Assessment field in the Calibration Setup Defaults record contains the value Percent of Range, this field is populated with a default value from the Calibration Setup Defaults record. <p>This field is populated with the value 3 by default, as specified in the Analog Error Limit field in the Calibration Setup Defaults record. You can modify this value if needed.</p> <p>This value is used in the Calibration record to calculate whether a calibration event has passed or failed.</p> |
| Model Number | Character | The model number of the Asset that is linked to the Calibration Template. | This field is disabled and populated with the value stored in the Model Number field in the Asset that is linked to the Calibration Template. If you have accessed the template from the library, this field is disabled and blank. |

| Field | Data Type | Description | Behavior and Usage |
|------------------------|-----------|---|--|
| Output Damping Setting | Character | <p>When this field is set to on, it indicates that the device utilizes a secondary setting of damping time. This provides a delay for the output of a device to stabilize after a step change that is applied to the input. This is applicable only to automated calibration.</p> | <p>This field appears as a list, and contains the following options:</p> <ul style="list-style-type: none"> • on • off <p>This field is populated with a default value, as specified in the Output Damping Setting field in the Calibration Setup Defaults record.</p> <p>This field appears as a list that is populated by the MI_STATUS System Code Table.</p> |

| Field | Data Type | Description | Behavior and Usage |
|-------------|-----------|---|---|
| Output Type | Character | The output type for the analog calibration. | <p>This field is required. This field appears as a list that is populated by the MI_CALIBRATION_IO_TYPES System Code Table.</p> <p>The options that appear in the list depend on the value stored in the Calibration Type field.</p> <p>If the value in the Calibration Type field is Druck DPI620 (Genii), then you can choose from the following options:</p> <ul style="list-style-type: none"> • Pressure • Temperature • Voltage • Current • Frequency • Resistance • Observed <p>If the value in the Calibration Type field is Druck DPI61x, then you can choose from the following options:</p> <ul style="list-style-type: none"> • Pressure • Voltage • Current • Observed <p>If the value in the Calibration Type field is FLUKE 74X, then you can choose from the following options:</p> <ul style="list-style-type: none"> • Pressure • Temperature • Voltage • Current • Frequency • Resistance • Other <p>If the value in the Calibration Type field is Analog-Manual, then you can choose from the following options:</p> <ul style="list-style-type: none"> • Pressure • Temperature • Flow • Level • Voltage • Current • Frequency • Resistance • Other • HART |

| Field | Data Type | Description | Behavior and Usage |
|---------------------------|-----------|---|---|
| Performs Square Root | Character | Indicates whether or not a square root calculation will be performed on the values in the Input Measure AF and Input Measure AL fields. | <p>This field is disabled or enabled based on the state of other fields on the datasheet:</p> <ul style="list-style-type: none"> You can select the value Yes (Y) only if the value in the Input Type field is Pressure or Flow. When the value in the Calibration Strategy field is 2 Down or 2 Up then 2 Down, this field is disabled and displays the value No (N). When the Manual Entered Input Values check box on the Automated Calibration Parameters section is selected, this field will be disabled and populated with the value No (N). <p>This field appears as a list that is populated by the MI_YES_NO System Code Table.</p> |
| Primary Input LRV | Numeric | A number representing the lower range value for the primary input range. | <p>This field is grouped with the following fields in the Primary Input Details section:</p> <ul style="list-style-type: none"> Primary_Input_URV Primary_Input_Range_Units <p>The value stored in the Primary Input LRV field combined with the value stored in the Primary Input URV field define the primary input range for the calibration. This field is required.</p> |
| Primary Input Range Units | Character | The units of measure for the primary input. | <p>This field is grouped with the following other fields in the Primary Input Details section:</p> <ul style="list-style-type: none"> Primary_Input_LRV Primary_Input_URV <p>This list contains a list of UOMs that is filtered based on the value in the Input Type field and the Calibration Type field. This means that only the UOM values that are relevant for that input type and calibration type will appear in the list. After you select a value in this list, the GE Digital APM system checks to see if the UOM is compatible with the device. If the selected value is not compatible, then an error message will appear, indicating the problem.</p> |
| Primary Input URV | Numeric | A number representing the upper range value for the primary input range. | <p>This field is grouped with the following other fields in the Primary Input Details section:</p> <ul style="list-style-type: none"> Primary_Input_LRV Primary_Input_Range_Units <p>The value stored in the Primary Input URV field combined with the value stored in the Primary Input LRV field define the primary input range for the calibration. This field is required.</p> |
| Primary Output LRV | Numeric | A number representing the lower range value for the primary output range. | <p>This field is grouped with the following other fields in the Primary Output Details section:</p> <ul style="list-style-type: none"> Primary_Output_URV Primary_Output_Range_Units <p>The value stored in the Primary Output LRV field combined with the value stored in the Primary Output URV field define the primary output range for the calibration. This field is required.</p> |

| Field | Data Type | Description | Behavior and Usage |
|----------------------------|-----------|--|---|
| Primary Output Range Units | Character | The units of measure for the primary input. | <p>This field is grouped with the following fields in the Primary Output Details section:</p> <ul style="list-style-type: none"> Primary_Output_LRV Primary_Output_URV <p>This list contains a list of UOMs that is filtered based on the value in the Output Type field and the Calibration Type field. This means that only the UOM values that are relevant for that input type and calibration type will appear in the list. After you select a value in this list, the GE Digital APM system checks to see if the UOM is compatible with the device. If the selected value is not compatible, then an error message will appear, indicating the problem.</p> <p>If the value in the Calibration Type field is Druck DPI620 (Genii) or Druck DPI61x, then this list is populated by the CALIBRATION_DRUCK_UOM_LIST System Code Table.</p> <p>This field appears as a list that is populated by the MI_CALIBRATION_IO_TYPES System Code Table.</p> |
| Primary Output URV | Numeric | A number representing the upper range value for the primary output range. | <p>This field is grouped with the following fields in the Primary Output Details section:</p> <ul style="list-style-type: none"> Primary_Output_LRV Primary_Output_Range_Units <p>The value stored in the Primary Output URV field combined with the value stored in the Primary Output LRV field define the primary output range for the calibration.</p> <p>This field is required.</p> |
| Refresh Equipment Data | Boolean | Indicates whether or not information in the Asset that is linked to the Calibration Template has been updated. | <p>This field does not appear on the datasheet by default. This field is used by the GE Digital APM system, and should not be modified.</p> |
| RTD Wiring Configuration | Character | The RTD wiring configuration associated with the calibration. | <p>This field is enabled if:</p> <ul style="list-style-type: none"> The value stored in the Calibration Type field is FLUKE 74X. The value stored in the Output Type field is Temperature. The Temperature Element Type field contains a value that is an RTD type. <p>If the value stored in the Calibration Type field is FLUKE 74X, then the RTD Wiring Configuration list includes the following additional options:</p> <ul style="list-style-type: none"> 2_Wire_Ohms 3_Wire_Ohms 4_Wire_Ohms |

| Field | Data Type | Description | Behavior and Usage |
|-----------------|-----------|--|--|
| Serial Number | Character | The serial number of the Asset that is linked to the Calibration Template. | This field is disabled and populated with the value stored in the Serial Number field in the Asset that is linked to the Calibration Template. If you have accessed the template from the library, this field is disabled and blank. |
| Tag Description | Character | The description of the asset that is linked to the Calibration Template. | This field is disabled and populated with the value stored in the Equipment Short Description field in the Asset that is linked to the Calibration Template. If you have accessed the template from the library, this field is disabled and blank. |
| Tag Name | Character | The ID of the Asset that is linked to the Calibration Template. This is the Asset ID of the Asset. | This field is disabled and populated with the value in the Equipment field in the linked Asset record. If you have accessed the template from the library, this field is disabled and blank. |
| TC Linear | Boolean | Indicates whether you want to provide a value in the Linear TC LRV and Linear TC URV fields. | This check box is cleared by default, and enabled only if the value in the Calibration Type field is FLUKE 74X and the Temperature Element Type field contains a Thermocouple value. |

| Field | Data Type | Description | Behavior and Usage |
|--------------------------|-----------|---|--|
| Temperature Element Type | Character | The type of temperature element used for the calibration. | <p>The Temperature Element Type field is enabled and required only if the value in the Calibration Type field is not Analog-Manual and if the Input Type or Output Type fields contain the value Temperature.</p> <p>This field appears as a list that is populated by the MI_SENSOR_TYPE System Code Table.</p> <p>The temperature element types that are listed depend on the value stored in the Calibration Type field.</p> <p>If the value in the Calibration Type field is Druck DPI620 (Genii) or Druck DPI620 (Genii), then the following Resistance Temperature Detectors (RTD) and Thermocouples (TC) are supported:</p> <ul style="list-style-type: none"> • GE DRUCK RTD TYPE (GE Druck RTD Type) <ul style="list-style-type: none"> ◦ None ◦ Type CU10 (427) RTD ◦ Type NI100 (672) RTD ◦ Type NI120 (672) RTD ◦ Type PT100 (385) RTD ◦ Type PT100 (392) RTD ◦ Type PT1000 (385) RTD ◦ Type PT200 (385) RTD ◦ Type PT50 (385) RTD ◦ Type PT500 (385) RTD • GE DRUCK TC TYPE (GE Druck TC Type) <ul style="list-style-type: none"> ◦ None ◦ Type B Thermocouple ◦ Type C Thermocouple ◦ Type D Thermocouple ◦ Type E Thermocouple ◦ Type J Thermocouple ◦ Type K Thermocouple ◦ Type L Thermocouple ◦ Type N Thermocouple ◦ Type R Thermocouple ◦ Type S Thermocouple ◦ Type T Thermocouple ◦ Type U Thermocouple |

| Field | Data Type | Description | Behavior and Usage |
|----------------|-----------|--|--|
| | | | <p>If the value in the Calibration Type field is FLUKE 74X, then the following RTDs and TCs are supported:</p> <ul style="list-style-type: none"> • FLUKE RTD TYPE (Fluke RTD Type) <ul style="list-style-type: none"> ◦ None ◦ Type CU10 (427) RTD ◦ Type NI120 (672) RTD ◦ Type PT100 (385) RTD ◦ Type PT100 (3916) RTD ◦ Type PT100 (3926) RTD ◦ Type PT1000 (385) RTD ◦ Type PT200 (385) RTD ◦ Type PT500 (385) RTD • FLUKE TC TYPE (Fluke TC Type) <ul style="list-style-type: none"> ◦ None ◦ Type B Thermocouple ◦ Type C Thermocouple ◦ Type E Thermocouple ◦ Type J Thermocouple ◦ Type K Thermocouple ◦ Type L Thermocouple ◦ Type N Thermocouple ◦ Type R Thermocouple ◦ Type S Thermocouple ◦ Type T Thermocouple ◦ Type U Thermocouple <p>If using a GE Druck calibrator, when you select None in this field, a validation message appears, specifying that it is not a valid value.</p> |
| Template ID | Character | The ID of the Calibration Template. | This field is required and must be unique. |
| Template State | Character | The state of the Calibration Template. | <p>This field contains the value Development by default. This field contains the following values:</p> <ul style="list-style-type: none"> • Development • Approved • Obsolete |

Calibration Template, CMX Records

Calibration Template, CMX records store details about the calibration that must be performed for a specific asset using CMX software. This topic provides an alphabetical list and description of the fields that exist for the Calibration Template, CMX family. The information in the table reflects the baseline state and behavior of these fields. This list is not comprehensive.

This family is enabled for site filtering, which means that records in this family can be assigned to a specific site and will only be accessible to users who are assigned to the same site and have the

appropriate license and family privileges. For more information, refer to the [Sites](#) section of the documentation.

| Field | Data Type | Description | Behavior and Usage |
|------------------|-----------|--|---|
| Asset Key | Numeric | The Entity Key of the asset to which the Calibration Template is linked. | This field does not appear on a datasheet by default. When you apply a Calibration Template to an Asset, the details of the Asset are retrieved based on the value in the Asset Key field. This field is used by the GE Digital APM system, and should not be modified. |
| Calibration Type | Character | The type of calibration you will perform. | This field is disabled, and contains the value CMX by default. This field is required. |
| Input Method | Character | The method for sending input measures to the asset that is being calibrated. | This field appears as a list that is populated by the MI_CMX_TEMPLATE_INPUT_METHOD System Code Table. This field contains a list of the following input methods: <ul style="list-style-type: none"> Controlled (Controlled) Controlled and Measured (Controlled and Measured) Keyed (Keyed) Measured (Measured) Sourced (Sourced) N/A (N/A) This field is required. |

| Field | Data Type | Description | Behavior and Usage |
|-----------------|-----------|---|---|
| Input Type | Character | The type of input for the calibration to be performed. | <p>This field appears as a list that is populated by the MI_CMX_TEMPLATE_INPUT_TY PE System Code Table. This field contains a list of the following input types:</p> <ul style="list-style-type: none"> • CHECKLIST (CHECKLIST) • ELECTRICAL (ELECTRICAL) • MASS (MASS) • PRESSURE (PRESSURE) • TEMPERATURE (TEMPERATURE) • VALUE (VALUE) • N/A (N/A) <p>This field is required.</p> |
| Max Error Limit | Numeric | A number representing the maximum amount of error in percent that is allowed before a calibration event is considered failed. | <p>This field is populated with the value 3 by default. You can modify this value if needed.</p> <p>This value is used in the calibration to calculate whether a calibration event has failed or passed.</p> |
| Output Method | Character | The method for capturing output measures from the asset that is being calibrated. | <p>This field appears as a list that is populated by the MI_CMX_TEMPLATE_OUTPUT_METHOD System Code Table. This field contains a list of the following output method:</p> <ul style="list-style-type: none"> • Keyed (Keyed) • Measured (Measured) • FOUNDATION H1 (FOUNDATION H1) • HART (HART) • PROFIBUS PA (PROFIBUS PA) • N/A (N/A) <p>This field is required.</p> |

| Field | Data Type | Description | Behavior and Usage |
|-------------------|-----------|--|--|
| Output Type | Character | The type of output for the calibration. | <p>This field appears as a list that is populated by the MI_CMX_TEMPLATE_OUTPUT_TYPE System Code Table. This field contains a list of the following output types :</p> <ul style="list-style-type: none"> • ELECTRICAL (ELECTRICAL) • MASS (MASS) • PRESSURE (PRESSURE) • STATE (STATE) • TEMPERATURE (TEMPERATURE) • VALUE (VALUE) • N/A (N/A) <p>This field is required.</p> |
| Primary Input LRV | Numeric | A number representing the lower range value for the primary input range. | <p>This field appears in the Primary Input Details subsection of the Equipment Details section.</p> <p>The value stored in the Primary Input LRV field combined with the value stored in the Primary Input URV field defines the primary input range for the calibration.</p> <p>This field is disabled if you selected one of the following values in the Template Code field:</p> <ul style="list-style-type: none"> • Checklist (cl) • Checklist, IEC60079-17, Table 1 (c6007917_1) • Checklist, IEC60079-17, Table 2 (c6007917_2) <p>For other values of Template Code, this field is required.</p> |

| Field | Data Type | Description | Behavior and Usage |
|---------------------------|-----------|--|--|
| Primary Input Range Units | Character | The units of measure for the primary input. | <p>This field contains a list of Units of Measurements.</p> <p>This field is disabled if you selected one of the following values in the Template Code field:</p> <ul style="list-style-type: none"> • Checklist (cl) • Checklist, IEC60079-17, Table 1 (c6007917_1) • Checklist, IEC60079-17, Table 2 (c6007917_2) <p>For other values of Template Code, this field is required.</p> |
| Primary Input URV | Numeric | A number representing the upper range value for the primary input range. | <p>This field appears in the Primary Input Details subsection of the Equipment Details section.</p> <p>The value stored in the Primary Input URV field combined with the value stored in the Primary Input LRV field defines the primary input range for the calibration.</p> <p>This field is disabled if you selected one of the following values in the Template Code field:</p> <ul style="list-style-type: none"> • Checklist (cl) • Checklist, IEC60079-17, Table 1 (c6007917_1) • Checklist, IEC60079-17, Table 2 (c6007917_2) <p>For other values of Template Code, this field is required.</p> |

| Field | Data Type | Description | Behavior and Usage |
|----------------------|-----------|---|---|
| Primary Output LRV | Numeric | A number representing the lower range value for the primary output range. | <p>This field appears in the Primary Output Details subsection of the Equipment Details section.</p> <p>The value stored in the Primary Output LRV field combined with the value stored in the Primary Output URV field defines the primary output range for the calibration.</p> <p>This field is disabled if you selected one of the following values in the Template Code field:</p> <ul style="list-style-type: none"> • Checklist (cl) • Checklist, IEC60079-17, Table 1 (c6007917_1) • Checklist, IEC60079-17, Table 2 (c6007917_2) • Electrical Switch (es) • Pressure Switch (ps) • Temperature Switch (ts) <p>For other values of Template Code, this field is required.</p> |
| Primary Output Units | Character | The units of measure for the primary input. | <p>This field contains a list of Units of Measurements.</p> <p>This field is disabled if you selected one of the following values in the Template Code field:</p> <ul style="list-style-type: none"> • Checklist (cl) • Checklist, IEC60079-17, Table 1 (c6007917_1) • Checklist, IEC60079-17, Table 2 (c6007917_2) • Electrical Switch (es) • Pressure Switch (ps) • Temperature Switch (ts) <p>For other values of Template Code, this field is required.</p> |

| Field | Data Type | Description | Behavior and Usage |
|--------------------|-----------|--|---|
| Primary Output URV | Numeric | A number representing the upper range value for the primary output range. | <p>This field appears in the Primary Output Details subsection of the Equipment Details section.</p> <p>The value stored in the Primary Output URV field combined with the value stored in the Primary Output LRV field defines the primary output range for the calibration.</p> <p>This field is disabled if you selected one of the following values in the Template Code field:</p> <ul style="list-style-type: none"> • Checklist (cl) • Checklist, IEC60079-17, Table 1 (c6007917_1) • Checklist, IEC60079-17, Table 2 (c6007917_2) • Electrical Switch (es) • Pressure Switch (ps) • Temperature Switch (ts) <p>For other values of Template Code, this field is required.</p> |
| Switch Set Point | Character | Indicates the value (i.e., pressure, temperature, or electrical output) at which the switch changes state. | <p>This field appears in the Primary Output Details subsection of the Equipment Details section.</p> <p>If you selected one of the following values in the Template Code field, then this field is enabled and required:</p> <ul style="list-style-type: none"> • Pressure Switch (ps) • Temperature Switch (ts) • Electrical Switch (es) <p>For other values of Template Code, this field is disabled.</p> |

| Field | Data Type | Description | Behavior and Usage |
|--------------------|-----------|---|---|
| Switch Reset Point | Numeric | Indicates the value (i.e., pressure, temperature, or electrical output) at which the switch resets to normal state. | <p>This field appears in the Primary Output Details subsection of the Equipment Details section.</p> <p>If you selected one of the following values in the Template Code field, then this field is enabled and required:</p> <ul style="list-style-type: none"> • Pressure Switch (ps) • Temperature Switch (ts) • Electrical Switch (es) <p>For other values of Template Code, this field is disabled.</p> |
| Switch Set Action | Numeric | Indicates the state that the switch must change to, when the value (i.e., pressure, temperature, or electrical output) is at the set point. | <p>This field appears in the Primary Output Details subsection of the Equipment Details section.</p> <p>This field contains a list of the following values:</p> <ul style="list-style-type: none"> • Opens • Closes <p>If you selected one of the following values in the Template Code field, then this field is enabled and required:</p> <ul style="list-style-type: none"> • Pressure Switch (ps) • Temperature Switch (ts) • Electrical Switch (es) <p>For other values of Template Code, this field is disabled.</p> |
| Template Code | Character | Identifies the corresponding template type in CMX Software. | <p>This field appears as a list that is populated by the Template_Code System Code Table.</p> <p>The template codes contain a value that can map the template to the corresponding template type in the CMX software.</p> <p>Based on your selection in this field, the fields in the Equipment Details section of the datasheet are either enabled or disabled.</p> <p>This field is required.</p> |

| Field | Data Type | Description | Behavior and Usage |
|----------------|-----------|---|---|
| Template ID | Character | The Identification of the Calibration Template. | This field is required and must be unique. |
| Template State | Character | The state of the Calibration Template. | This field contains the value Development by default. You can select one of following values in this field: <ul style="list-style-type: none"> Development (Development) Approved (Approved) Obsolete (Obsolete) |

Calibration Template Detail, Analyzer

Calibration Template Detail, Analyzer records store information about the single component analyzer calibration strategy details. This topic provides an alphabetical list and description of the fields that exist for the Calibration Template Detail, Analyzer family and appear on the Calibration Template, Single Component Analyzer datasheet. The information in the table reflects the baseline state and behavior of these fields. This list is not comprehensive.

This family is enabled for site filtering, which means that records in this family can be assigned to a specific site and will only be accessible to users who are assigned to the same site and have the appropriate license and family privileges. For more information, refer to the [Sites](#) section of the documentation.

| Field | Data Type | Description | Behavior and Usage |
|--------------------------------|-----------|---|---|
| Calibration Template Detail ID | Character | The ID of the calibration template. | This field is populated automatically with the ID of the calibration template. |
| Component Name | Character | The name of the standard gas component. | This field is populated by the MI_CHEMICAL_COMPONENTS System Code Table. You can enter a value manually. |
| Component Units | Character | The units of measure for the composition of the standard gas component. | You can enter a value manually. |
| Component Value | Numeric | A number representing the amount of gas in the cylinder. | You can enter a value manually. |
| Input Up/Dn | Character | A value representing the up or down value range of a test point for a calibration strategy. | This field is populated automatically based on the value that you selected in the Calibration Strategy field. |

| Field | Data Type | Description | Behavior and Usage |
|----------------------------------|-----------|---|---|
| Percent of Scale Sequence Number | Numeric | A number representing the sequence for the percentage of scale test points. | This field is populated automatically based on the value that you selected in the Calibration Strategy field. |
| Percent of Scale Test Point | Numeric | A number representing the percentage of test points. | This field is populated automatically based on the value that you selected in the Calibration Strategy field. |

Calibration Template Detail, Functional Test Records

Calibration Template Detail, Functional Test records store information about a functional test that should be performed on the asset. This topic provides an alphabetical list and description of the fields that exist for the Calibration Template Detail, Functional Test family. The information in the table reflects the baseline state and behavior of these fields. This list is not comprehensive.

This family is enabled for site filtering, which means that records in this family can be assigned to a specific site and will only be accessible to users who are assigned to the same site and have the appropriate license and family privileges. For more information, refer to the [Sites](#) section of the documentation.

| Field | Data Type | Description | Behavior and Usage |
|---------------|-----------|--|--|
| Condition | Character | A possible answer to an instruction that has the response type list. You can define up to 10 conditions (i.e., options) for each list response type. | This field is enabled only if the value stored in the Response Type field is List. |
| Instruction | Text | The step you are performing during the functional test (e.g., Describe the condition of the wires). | None |
| Response Type | Character | The type of response you should give to the question defined in the Instruction field. | This field appears as a list that is populated by the MI_CALIBRATION_CHECKLIST_TYPE System Code Table. You can select one of the following values: <ul style="list-style-type: none"> • Yes/No: The response will be either Yes or No. • Number: The response will be a numeric value. • Text: The response will be a text value. • Selection: The response will be one or more of the options provided in the Condition fields. |

| Field | Data Type | Description | Behavior and Usage |
|-------------------|-----------|--|--|
| Sequence Number | Numeric | A numeric value that represents the order in which the step identified in the Instruction field should be executed in relation to the other steps. | This list contains numeric values from 1 to 25. We recommend that you select values in sequential order (e.g., select the value 1 in the first record, select the value 2 in the second record), but if you do not, when you save the records, they will be sorted automatically according to the values stored in the Sequence Number fields. This field is required. |
| Expected Response | Character | The Response expected for the Instruction while performing Functional Test Calibration. | The Expected Response is pre-recorded while defining the Functional Test Calibration Template. After performing calibration, this response is matched with user entered response to mark the Calibration as passed or failed. This field is not mandatory. |
| Validate | Boolean | Indicates whether to compare Expected Response with Response entered in Functional Test Calibration result | By default, this check box is not selected. If you select this check box, the Expected Response will be matched with Response entered by Calibration Technician |

Calibration Template, Discrete Records

Calibration Template, Discrete records store details on the discrete calibration that should be performed for a specific piece of equipment or a location. The following table provides an alphabetical list and description of the fields that exist for the Calibration Template, Discrete family. The information in the table reflects the baseline state and behavior of these fields. This list is not comprehensive.

This family is enabled for site filtering, which means that records in this family can be assigned to a specific site and will only be accessible to users who are assigned to the same site and have the appropriate license and family privileges. For more information, refer to the [Sites](#) section of the documentation.

| Field | Data Type | Description | Behavior and Usage |
|----------------------------|-----------|--|--|
| Activate Switch 1 | Character | A value indicating the direction of the measured variable as it relates to the shelf state of Switch 1. | This field is required, and contains the following baseline values: <ul style="list-style-type: none"> Increase Decrease After you link a Calibration record to this Calibration Template, the value in this field is populated in the Activate Switch 1 field in the Calibration record. |
| Activate Switch 2 | Character | A value indicating the direction of the measured variable as it relates to the shelf state of Switch 2. | This field is disabled by default. This field is required only if the SW 2 Setpoint field contains a value. This field contains the following baseline values: <ul style="list-style-type: none"> Increase Decrease |
| Asset Key | Numeric | The Entity Key of the Asset record to which the Calibration Template record is linked. This field is used by the GE Digital APM system and should not be modified. | This field does not appear on a datasheet. This value is used to execute the Instrument Data query that is specified on the Calibration Administration page, so that asset data can be populated in the Calibration Template record. |
| Calibration Device Mapping | Character | A value indicating the mapping ID for the Send function. | This field is disabled by default. |
| Calibration Task Key | Numeric | The task key of the Calibration. | This field does not appear on the datasheet. |
| Calibration Template Key | Character | The template key of the Calibration. | This field does not appear on the datasheet. |
| Calibration Type | Character | The type of calibration for which you are creating the template. | This field is disabled. Based on the type of template that you selected on the Profile Template page, this field is populated with one of the following values: <ul style="list-style-type: none"> If you selected FLUKE 74X on the Mappings page, then the Calibration Type field contains the value FLUKE 74X. If you selected Druck DPI620 (Genii) on the Mappings page or the Manual Templates page, then the Calibration Type field contains the value Druck DPI620 (Genii). If you selected Druck DPI61x on the Mappings page, then the Calibration Type field contains the value Druck DPI61x. If you selected Manual on the Mappings page, then the Calibration Type field contains the value Switch - Manual. When this option is selected, the fields in the Automated Calibration Parameters section are disabled. Depending on the selection, the Input Type and Output Type fields are populated automatically. |

| Field | Data Type | Description | Behavior and Usage |
|--------------------------|-----------|---|--|
| Custom Input Lower Range | Numeric | A number representing the lower range value for the custom input range. | <p>This field is labeled Low and is grouped with the following other fields in the Automated Calibration Parameters section:</p> <ul style="list-style-type: none"> • Custom Input Upper Range • Custom Input Range UOM <p>This field is enabled and required only when the Custom Input Values check box is selected.</p> |
| Custom Input Range UOM | Character | The units of measure for the custom input range. | <p>This field appears as a list labeled UOM and is grouped with the following other fields in the Automated Calibration Parameters section:</p> <ul style="list-style-type: none"> • Custom Input Lower Range • Custom Input Upper Range <p>If the Calibrator Type field contains the value Druck DPI620 (Genii) or Druck DPI61x, then this list is filtered by the value that you select in the Input Type field.</p> <p>This field is enabled and required only when the Custom Input Values check box is selected. This field appears as a list that is populated by the ML_CALIBRATION_IO_TYPES System Code Table.</p> |
| Custom Input Upper Range | Numeric | A number representing the upper range value for the custom input range. | <p>On the datasheet, this field appears as a text box labeled High and is grouped with the following other fields in the Automated Calibration Parameters section:</p> <ul style="list-style-type: none"> • Custom Input Lower Range • Custom Input Range UOM <p>This field is enabled and required only when the Custom Input Values check box is selected.</p> |

| Field | Data Type | Description | Behavior and Usage |
|-------------------------------|-----------|---|--|
| Device Input UOM | Character | The Input unit of measure to be used by the device. | <p>This field is grouped with the following other fields in the Primary Input Details section:</p> <ul style="list-style-type: none"> • Primary Input LRV • Primary Input URV • Primary Input Range Units <p>This list contains a list of UOMs that are filtered based on the value in the Input Type field and the Calibration Type field. This means that only the UOM values that are relevant for that input type and calibration type will appear in the list.</p> <p>This field uses the following system code tables to display the UOMs in the list:</p> <ul style="list-style-type: none"> • Pressure: FLUKE PRESSURE BASE UOM • Temperature: FLUKE TEMPERATURE BASE UOM • Voltage: FLUKE VOLTAGE BASE UOM • Current: FLUKE CURRENT BASE UOM • Frequency: FLUKE FREQUENCY BASE UOM • Resistance: FLUKE RESISTANCE BASE UOM • Other: CALIBRATION UOM GENERAL <p>Note: If this field is empty, then the default UOM for Primary Input Range Units as listed in Calibration Unit of Measurements (UOMs) and their Conversions section gets downloaded to the Calibrator.</p> |
| Engineering Units Error Limit | Numeric | A number representing the maximum amount of error in engineering units that is allowed before a calibration event is considered failed. | <p>The state of this field is dependent upon the state of other fields.</p> <ul style="list-style-type: none"> • If the Error Assessment field in the Calibration Setup Defaults record contains the value Engineering Units, this field is populated with a default value from the Calibration Setup Defaults record. • If the Error Assessment field in the Calibration Setup Defaults record contains the value Percent of Range, in case of manual calibration, this field is disabled and blank. <p>In case of automated calibration, this field is disabled and populated based on the values in the Primary Input Range and the Error Limit fields, using the following calculation:</p> <p>(<Max Error Limit>/100) x (<URV> -<LRV>)</p> <p>...where:</p> <ul style="list-style-type: none"> • <Max Error Limit> is the value in the Max Error Limit field. • <URV> is the value in the Primary Input Range URV field. • <LRV> is the value in the Primary Input Range LRV field. <p>You can modify the default value if required. This is a required field.</p> <p>The value stored in this field is the value that will be sent to the device. If you modify this value, then the value in the Max Error Limit (PCT) field will be updated automatically.</p> |

| Field | Data Type | Description | Behavior and Usage |
|-----------------------|-----------|--|--|
| Error Assessment | Character | The error calculation type that you will use to enter the calibration results. | <p>This field is populated with a default value from the Calibration Setup Defaults record. You can select one of the following values:</p> <ul style="list-style-type: none"> • Percent of Range: When you select this value, the Max Error Limit field is enabled, and the Engineering Units Error Limit field is disabled. • Engineering Units: When you select this value, the Engineering Units Error Limit field is enabled, and the Error Limit field is disabled. <p>You can change the value if required.</p> |
| Input Damping Setting | Character | Indicates whether this setting should be on or off. | <p>This field appears as a list and contains the following options:</p> <ul style="list-style-type: none"> • on • off <p>This field is populated with a default value, as specified in the Input Damping Setting field in the Calibration Setup Defaults record. You can modify this value if needed.</p> <p>This field appears as a list that is populated by the MI_STATUS System Code Table.</p> |
| Input Min Max Mode | Character | Indicates whether this setting should be on or off. | <p>This field appears as a list and contains the following options:</p> <ul style="list-style-type: none"> • on • off <p>This field is populated with a default value, as specified in the Input Min Max Mode field in the Calibration Setup Defaults record. You can modify this value if needed.</p> <p>This field appears as a list that is populated by the MI_STATUS System Code Table.</p> |
| Input Type | Character | The input type for the discrete calibration. | <p>This field appears as a list that is populated by the MI_CALIBRATION_IO_TYPES System Code Table.</p> <p>This list is filtered by the value that is present in the Calibration Type field.</p> <p>This field is required.</p> |
| Linear TC LRV | Numeric | A number representing the lower value on the linear thermocouple range. | <p>This field is enabled only when the TC Linear check box is selected. This field is populated with values from the following fields based on the value that exists in the Output Type field and Input Type field:</p> <ul style="list-style-type: none"> • Primary Input Range LRV if the value in the Output Type field is not Temperature and the value in the Input Range field is Temperature. • Primary Output Range LRV if the value in the Output Type field is Temperature. |

| Field | Data Type | Description | Behavior and Usage |
|-----------------------------|-----------|---|--|
| Linear TC URV | Numeric | A number representing upper value on the linear thermocouple range. | <p>This field is enabled only when the TC Linear check box is selected. This field is populated with values from the following fields based on the value that exists in the Output Type field:</p> <ul style="list-style-type: none"> Primary Input Range URV if the value in the Output Type field is not Temperature and the value in the Input Range field is Temperature. Primary Output Range URV if the value in the Output Type field is Temperature. |
| Manual Entered Input Values | Boolean | Indicates whether you will manually enter the input value into the device during the automated calibration. | <p>This check box is cleared by default. Selecting this check box indicates that you will manually enter the input value into the device during the automated calibration. The state of this field is dependent upon the state of other fields. Specifically, this check box is:</p> <ul style="list-style-type: none"> Enabled only when the Enable Automated Calibrations check box is selected. Selected and disabled automatically when the Custom Input Values check box is selected. |
| Max Error Limit | Numeric | A number representing maximum amount of error in percent that is allowed before a calibration event is considered failed. | <p>The state of this field depends on the state of other fields.</p> <ul style="list-style-type: none"> If the Error Assessment field in the Calibration Setup Defaults record contains the value Engineering Units, this field is disabled and blank. If the Error Assessment field in the Calibration Setup Defaults record contains the value Percentage of Range, this field is populated with a default value from the Calibration Setup Defaults record. <p>This value is used in the Calibration Event record to calculate whether the calibration event has passed or failed.</p> <p>You can modify the default value if required. This field is required.</p> |
| Output Damping Setting | Character | A value indicating whether this setting should be on or off. | <p>This field appears as a list and contains the following options:</p> <ul style="list-style-type: none"> on off <p>This field is populated with a default value, as specified in the Output Damping Setting field in the Calibration Setup Defaults record.</p> <p>This field appears as a list that is populated by the MI_STATUS System Code Table.</p> |
| Output Type | Character | The output type for the discrete calibration. | <p>This field appears as a list that is populated by the MI_CALIBRATION_IO_TYPES System Code Table.</p> <p>This list is filtered by the value in the Calibration Type field.</p> <p>This field is required.</p> |

| Field | Data Type | Description | Behavior and Usage |
|---------------------------|-----------|---|--|
| Primary Input LRV | Numeric | A number representing the lower range value for the primary input range. | <p>This field is grouped with the following other fields in the Primary Input Details section:</p> <ul style="list-style-type: none"> Primary Input URV Primary Input Range Units <p>The value stored in the Primary Input LRV field combined with the value stored in the Primary Input URV field define the primary input range for the calibration.</p> <p>This field is required.</p> |
| Primary Input Range Units | Character | The UOM for the primary input. | <p>This field is grouped with the following other fields in the Primary Input Details section:</p> <ul style="list-style-type: none"> Primary Input LRV Primary Input URV <p>This list contains a list of units of measure that is filtered based on the value in the Input Type field. After you select a value in this list, the GE Digital APM system verifies if the UOM is compatible with the Fluke device. If the selected values are not compatible, then an error message will appear, indicating the problem.</p> |
| Primary Input URV | Numeric | A number representing the upper range value for the primary input range. | <p>This field is grouped with the following other fields in the Primary Input Details section:</p> <ul style="list-style-type: none"> Primary Input LRV Primary Input Range Units <p>The value stored in the Primary Input URV field combined with the value stored in the Primary Input LRV field define the primary input range for the calibration. This field is required.</p> |
| Ramp Time | Numeric | The amount of time (in seconds) a device will take to move from one test point to another for pressure units. | <p>This field is disabled when the value in the Calibration Type field contains FLUKE 74X.</p> <p>This field is populated by default with the value 30, as specified in the Ramp Time field in the Calibration Setup Defaults record.</p> <p>This field is required when the value in the Calibration Type field is Druck DPI620 (Genii) or Druck DPI61x.</p> |
| Repeat Count | Numeric | A value representing the number of test cycles to perform a calibration. | <p>You can enter a value in this field.</p> <p>This field is populated by default with the value 1, as specified in the Repeat Count field in the Calibration Setup Defaults record.</p> <p>This field is required when the value in the Calibration Type field is Druck DPI620 (Genii) or Druck DPI61x.</p> |
| Reset Set Point | Numeric | A value representing the point that the switch deactivates to its original state. | <p>You can enter a value in this field.</p> <p>This field is required when the value in the Calibration Type field is Druck DPI620 (Genii) or Druck DPI61x.</p> |

| Field | Data Type | Description | Behavior and Usage |
|--------------------------------------|-----------|---|--|
| RTD Wiring Configuration | Character | The RTD wiring configuration associated with the calibration. | This field is populated automatically if: <ul style="list-style-type: none"> The Enable Automated Calibrations check box is selected. The Temperature Element Type field contains a value that is an RTD type. |
| Specified Maximum Dead Band Switch 1 | Numeric | A number representing the upper value on the dead band range*, where the value in the SW 1 Setpoint field is the reference point on that range. The maximum dead band value represents the amount of allowable error above the setpoint value that can occur for a calibration to be considered passed. | This field is grouped with the following fields: <ul style="list-style-type: none"> Specified Minimum Dead Band Switch 1 Validate Deadband This field is populated using the following calculation: <Set point> x <Default Max Deadband> ...where: <ul style="list-style-type: none"> <Set point> is the value in the SW 1 Setpoint field. <Default Max Deadband> is the default value in the Discrete Max Deadband field in the Calibration Setup Defaults record. For example, if the value in the SW 1 Setpoint field is 80 and the value in the Discrete Max Deadband field in the Calibration Setup Defaults record is 10%, then the Maximum Dead Band field will contain the value 8, which indicates that the calibration can still be considered passed if the output value is higher than 80 by a value of 8. In other words, if the output value is 89, the calibration will be considered failed. If the output value is 88, the calibration will be considered passed. The GE Digital APM system will include the dead band values in the pass/fail validation process only if the Validate Deadband check box is selected on the Discrete Calibration Template Setup datasheet. If this check box is not selected, then only the values in the Max Error Limit and SW 1 Setpoint fields will be used to determine whether a calibration has passed or failed. The state of this field is dependent upon other fields. Specifically, if the Calibration Strategy field contains the value Single Switch or Double Switch, then this field is enabled. Otherwise, this field is disabled. You can modify this value if needed. |

| Field | Data Type | Description | Behavior and Usage |
|--------------------------------------|-----------|--|---|
| Specified Maximum Dead Band Switch 2 | Numeric | <p>A number representing the upper value on the dead band range,* where the value in the SW 2 Setpoint field is the reference point on that range. The maximum dead band value represent the amount of allowable error above the value in the setpoint value that can occur for a calibration to be considered passed.</p> | <p>On the datasheet, this field appears as a text box labeled Maximum Dead Band and is grouped with the following fields:</p> <ul style="list-style-type: none"> • Specified Minimum Dead Band Switch 2 • Validate Deadband <p>This field is populated automatically using the following calculation: $\text{<Set point>} \times \text{<Default Max Deadband>}$</p> <p>...where:</p> <ul style="list-style-type: none"> • <Set point> is the value in the SW 2 Setpoint field. • <Default Max Deadband> is the default value in the Discrete Max Deadband field in the Calibration Setup Defaults record. <p>For example, if the value in the SW 2 Setpoint field is 80, by default, and the value in the Discrete Max Deadband field in the Calibration Setup Defaults record is 10%, the Maximum Dead Band field will contain the value 8, which indicates that the calibration can still be considered passed if the output value is higher than 80 by a value of 8. In other words, if the output value is 89, the calibration will be considered failed. If the output value is 88, then the calibration will be considered passed.</p> <p>The GE Digital APM system will include the dead band values in the pass/fail validation process only if the Validate Deadband check box is selected on the Discrete Calibration Template Setup datasheet. If this check box is cleared, then only the values in the Max Error Limit and SW 2 Setpoint fields will be used to determine whether a calibration has passed or failed.</p> <p>The state of this field is dependent upon other fields. Specifically, if the Calibration Strategy field contains the value Double Switch, then this field is enabled. Otherwise, this field is disabled.</p> |

| Field | Data Type | Description | Behavior and Usage |
|--------------------------------------|-----------|---|--|
| Specified Minimum Dead Band Switch 1 | Numeric | <p>A number representing the lower range value on the dead band range, where the value in the SW 1 Setpoint field is the reference point on that range. The minimum dead band value represents the amount of allowable error below the value in the setpoint value that can occur for the calibration can be considered passed.</p> | <p>On the datasheet, this field appears as a text box labeled Minimum Dead Band and is grouped with the following fields:</p> <ul style="list-style-type: none"> • Specified Maximum Dead Band Switch 1 • Validate Deadband <p>This field is populated automatically using the following calculation: <Set point> x <Default Min Deadband></p> <p>...where:</p> <ul style="list-style-type: none"> • <Set point> is the value in the SW 1 Setpoint field. • <Default Min Deadband> is the value in the Discrete Min Deadband field in the Calibration Setup Defaults record. <p>For example, if the value in the SW 1 Setpoint field is 80, by default, and the value in the Discrete Min Deadband field in the Calibration Setup Defaults record is 1%, then the Minimum Dead Band field will contain the value 0.8, which indicates that the calibration can still be considered passed if the measurement is lower than 80 by a value of 0.8. In other words, if the measurement is 78.9, then the calibration will be considered failed. If the measurement is 79.2, then the calibration will be considered passed.</p> <p>The GE Digital APM system includes the dead band values in the pass/fail validation process only if the Validate Deadband check box is selected. If this check box is cleared, then only the values in the Max Error Limit and SW 1 Setpoint fields will be used to determine whether a calibration has passed or failed.</p> <p>The state of this field is dependent upon other fields. Specifically, if the Calibration Strategy field contains the value Single Switch or Double Switch, then this field is enabled. Otherwise, this field is disabled. You can modify this value if required.</p> |

| Field | Data Type | Description | Behavior and Usage |
|--------------------------------------|-----------|--|--|
| Specified Minimum Dead Band Switch 2 | Numeric | A number representing the lower range value on the dead band range, where the value in the SW 2 Setpoint field is the reference point on that range. The minimum dead band value represents the amount of allowable error below the value in the setpoint value that can occur for the calibration can be considered passed. | <p>On the datasheet, this field appears as a text box labeled Minimum Dead Band and is grouped with the following fields:</p> <ul style="list-style-type: none"> Specified Maximum Dead Band Switch 2 Validate Deadband <p>This field is populated automatically using the following calculation: <Set point> x <Default Min Deadband></p> <p>...where:</p> <ul style="list-style-type: none"> <Set point> is the value in the SW 2 Setpoint field. <Default Min Deadband> is the value in the Discrete Min Deadband field in the Calibration Setup Defaults record. <p>For example, if the value in the SW 2 Setpoint field is 80, by default, and the value in the Discrete Min Deadband field in the Calibration Setup Defaults record is 1%, then the Minimum Dead Band field will contain the value 0.8, which indicates that the calibration can still be considered passed if the measurement is lower than 80 by a value of .8. In other words, if the measurement is 78.9, then the calibration will be considered failed. If the measurement is 79.2, then the calibration will be considered passed.</p> <p>The GE Digital APM system will include the dead band values in the pass/fail validation process only if the Validate Deadband check box is selected. If this check box is cleared, then only the values in the Max Error Limit and SW 2 Setpoint fields will be used to determine whether a calibration has passed or failed.</p> <p>The state of this field is dependent upon other fields. Specifically, if the Calibration Strategy field contains the value Double Switch, then this field is enabled. Otherwise, this field is disabled. You can modify this value if required.</p> |
| SW 1 Contact State | Character | The contact position in which switch 1 will appear before it changes states (i.e., when the value in the SW 1 Setpoint field is reached). | <p>This field contains the following baseline values:</p> <ul style="list-style-type: none"> Normally Open (0) Normally Closed (1) <p>A value is required.</p> |
| SW 1 Setpoint | Numeric | A number representing the output value where you want switch 1 to trip. | This field is required. |
| SW 2 Contact State | Character | The contact position in which switch 2 will appear before it changes states (i.e., when the value in the SW 2 Setpoint field is reached). | <p>This field contains the following baseline values:</p> <ul style="list-style-type: none"> Normally Open (0) Normally Closed (1) <p>This field is disabled when the value in the Calibration Type field contains Druck DPI620 (Genii) or Druck DPI61x.</p> <p>This field is enabled and required only when the value in the Calibration Type field is FLUKE 74X and if the SW 2 Setpoint field contains a value.</p> |

| Field | Data Type | Description | Behavior and Usage |
|--------------------------|-----------|--|--|
| SW 2 Setpoint | Numeric | A number representing the output value where you want switch 2 to trip. | This field is required only when the value in the Calibration Type field is FLUKE 74X. |
| Tag Description | Character | The description of the Asset that is linked to the Calibration Template. | This field is disabled and populated with the value stored in the Equipment Short Description field in the Asset that is linked to the Calibration Template. If you have accessed the template from the library, this field is disabled and blank. |
| Temperature Element Type | Character | The type of temperature element used for the calibration. | <p>The Temperature Element Type field is enabled and required only if the value in the Calibration Type field is not Analog-Manual and if the Input Type or Output Type fields contain the value Temperature.</p> <p>This field appears as a list that is populated by the MI_SENSOR_TYPE System Code Table.</p> <p>The temperature element types that are listed depend on the value stored in the Calibration Type field.</p> <p>If the value in the Calibration Type field is Druck DPI620 (Genii) or Druck DPI620 (Genii), then the following Resistance Temperature Detectors (RTD) and Thermocouples (TC) are supported:</p> <ul style="list-style-type: none"> • GE DRUCK RTD TYPE (GE Druck RTD Type) <ul style="list-style-type: none"> ◦ None ◦ Type CU10 (427) RTD ◦ Type NI100 (672) RTD ◦ Type NI120 (672) RTD ◦ Type PT100 (385) RTD ◦ Type PT100 (392) RTD ◦ Type PT1000 (385) RTD ◦ Type PT200 (385) RTD ◦ Type PT50 (385) RTD ◦ Type PT500 (385) RTD • GE DRUCK TC TYPE (GE Druck TC Type) <ul style="list-style-type: none"> ◦ None ◦ Type B Thermocouple ◦ Type C Thermocouple ◦ Type D Thermocouple ◦ Type E Thermocouple ◦ Type J Thermocouple ◦ Type K Thermocouple ◦ Type L Thermocouple ◦ Type N Thermocouple ◦ Type R Thermocouple ◦ Type S Thermocouple ◦ Type T Thermocouple ◦ Type U Thermocouple |

| Field | Data Type | Description | Behavior and Usage |
|--------------------------|-----------|---|--|
| Temperature Element Type | Character | The type of temperature element used for the calibration. | <p>If the value in the Calibration Type field is FLUKE 74X, then the following RTDs and TCs are supported:</p> <ul style="list-style-type: none"> • FLUKE RTD TYPE (Fluke RTD Type) <ul style="list-style-type: none"> ◦ None ◦ Type CU10 (427) RTD ◦ Type NI120 (672) RTD ◦ Type PT100 (385) RTD ◦ Type PT100 (3916) RTD ◦ Type PT100 (3926) RTD ◦ Type PT1000 (385) RTD ◦ Type PT200 (385) RTD ◦ Type PT500 (385) RTD • FLUKE TC TYPE (Fluke TC Type) <ul style="list-style-type: none"> ◦ None ◦ Type B Thermocouple ◦ Type C Thermocouple ◦ Type E Thermocouple ◦ Type J Thermocouple ◦ Type K Thermocouple ◦ Type L Thermocouple ◦ Type N Thermocouple ◦ Type R Thermocouple ◦ Type S Thermocouple ◦ Type T Thermocouple ◦ Type U Thermocouple <p>If using a GE Druck calibrator, when you select None in this field, a validation message appears, specifying that it is not a valid value.</p> |
| Template State | Character | The state of the Calibration Template. | <p>This field contains the following values:</p> <ul style="list-style-type: none"> • Development • Approved • Obsolete <p>By default, this field contains the value Development.</p> |

| Field | Data Type | Description | Behavior and Usage |
|-------------------|-----------|--|--|
| TC Linear | Boolean | Indicates whether you want to provide a value in the Linear TC LRV and Linear TC URV fields. | This check box is cleared by default and enabled only if the Temperature Element Type field contains a Thermocouple value. |
| Validate Deadband | Boolean | Indicates whether or not you want the GE Digital APM system to include the dead band range values in the pass/fail validation process. | <p>This field is grouped with the following fields:</p> <ul style="list-style-type: none"> Specified Maximum Dead Band Switch 1 Specified Minimum Dead Band Switch 1 Specified Minimum Dead Band Switch 2 Specified Maximum Dead Band Switch 2 <p>When the value in the Calibration Type field is Druck DPI620 (Genii) or Druck DPI61x, this field is disabled.</p> <p>This field is populated with a default value, as specified in the Validate Deadband field in the Calibration Setup Defaults record.</p> <p>Selecting this check box indicates that you want the GE Digital APM system to include the dead band range values in the pass/fail validation process. When this check box is cleared, the GE Digital APM system will use only the values in the Max Error Limit and SW 1 Setpoint or SW 2 Setpoint fields in the pass/fail validation process.</p> |

Calibration Template, Functional Test Records

Calibration Template, Functional Test records store information about a functional test that should be performed on an asset. This topic provides an alphabetical list and description of the fields that exist for the Calibration Template, Functional Test family. The information in the table reflects the baseline state and behavior of these fields. This list is not comprehensive.

This family is enabled for site filtering, which means that records in this family can be assigned to a specific site and will only be accessible to users who are assigned to the same site and have the appropriate license and family privileges. For more information, refer to the [Sites](#) section of the documentation.

| Field | Data Type | Description | Behavior and Usage |
|---------------------|-----------|---|---|
| Calibration Task ID | Character | The ID of the Calibration Task that is linked to the Asset to which the Calibration Template is linked. | This field contains the IDs of all the Calibration Tasks that are linked to the Asset that is linked to the Calibration Template. You can select a Calibration Task from the list. If the Asset is not linked to any Calibration Task, then this list will be empty. |
| Calibration Type | Character | The type of calibration for which you are creating the template. | This field is disabled. Based on the type of template that you selected on the Profile Template page , this field is populated with one of the following values: <ul style="list-style-type: none"> If you selected FLUKE 74X on the Profile Templates page, then the Calibration Type field contains the value FLUKE 74X. If you selected Manual on the Profile Templates page, then the Calibration Type field contains the value Functional - Manual. |
| Manufacturer | Character | The manufacturer of the Asset that is linked to the Calibration Template. | This field is disabled and populated with the value stored in the Manufacturer field in the Asset that is linked to the Calibration Template. If you have accessed the template from the library, this field is disabled and blank. |
| Model Number | Character | The model number of the Asset that is linked to the Calibration Template. | This field is disabled and populated with the value stored in the Model Number field in the Asset that is linked to the Calibration Template. If you have accessed the template from the library, this field is disabled and blank. |

| Field | Data Type | Description | Behavior and Usage |
|-----------------|-----------|---|--|
| Serial Number | Character | The serial number of the Asset that is linked to the Calibration Template. | This field is disabled and populated with the value stored in the Serial Number field in the Asset that is linked to the Calibration Template. If you have accessed the template from the library, this field is disabled and blank. |
| Tag Description | Character | The description of the Asset that is linked to the Calibration Template. | This field is disabled and populated with the value stored in the Equipment Short Description field in the Asset that is linked to the Calibration Template. If you have accessed the template from the library, this field is disabled and blank. |
| Tag Name | Character | The ID of the Asset that is linked to the Calibration Template. | This field is disabled and populated with the value in the Equipment field in the Asset record that is linked to the Calibration Template. If you have accessed the template from the library, this field is disabled and blank. |
| Template ID | Character | The ID of the Calibration. | This field is required and must be unique. |
| Template State | Character | The state of the Calibration Template. By default, this field contains the value Development. | This list contains the following values: <ul style="list-style-type: none"> • Development • Approved • Obsolete You can select a value in this list. |

Calibration Template, Multi-Component Analyzer Records

Calibration Template, Analyzer Multi-Component records store details on the multi-component analyzer calibration that should be performed for a specific asset. This topic provides an alphabetical list and description of the fields that exist for the Calibration Template, Multi-Component Analyzer family. The information in the table reflects the baseline state and behavior of these fields. This list is not comprehensive.

This family is enabled for site filtering, which means that records in this family can be assigned to a specific site and will only be accessible to users who are assigned to the same site and have the appropriate license and family privileges. For more information, refer to the [Sites](#) section of the documentation.

| Field | Data Type | Description | Behavior and Usage |
|------------------------|-----------|--|---|
| Asset Key | Numeric | The Entity Key of the Asset that is linked to the Calibration Template. This field is used by the GE Digital APM system and should not be modified. | This field does not appear on a datasheet by default. When you apply a Calibration Template to an Asset, the details of the Asset are retrieved based on the value in the Asset Key field. |
| Calibration Task ID | Character | The ID of the Calibration Task that is linked to the Asset to which the Calibration Template is linked. | This list contains the IDs of the Calibration Tasks that are linked to the Asset to which the Calibration Template is linked. If the Asset is not linked to a Calibration Task, this list will be empty. |
| Calibration Type | Character | The type of calibration for which you are creating the template. | This field is disabled and populated with the value ANALYZER-MULTI COMPONENT by default. |
| Manufacturer | Character | The manufacturer of the Asset that is linked to the Calibration Template. | This field is disabled and populated with the value stored in the Manufacturer field in the Asset that is linked to the Calibration Template. If you have accessed the template from the library, this field is disabled and blank. |
| Max Error Limit | Numeric | A number representing the maximum percentage of error that is allowed before a calibration event is considered failed. | This field is populated with the value specified in the SC Analyzer Error Limit field in the Calibration Setup Defaults record. You can modify this value if required. |
| Model Number | Character | The model number of the Asset that is linked to the Calibration Template. | This field is disabled and populated with the value stored in the Model Number field in the Asset that is linked to the Calibration Template. If you have accessed the template from the library, this field is disabled and blank. |
| Refresh Equipment Data | Boolean | Indicates whether or not information in the Asset that is linked to the Calibration Template has been updated. This field is used by the GE Digital APM system and should not be modified. | This field does not appear on a datasheet by default. |

| Field | Data Type | Description | Behavior and Usage |
|-----------------|-----------|--|--|
| Serial Number | Character | The serial number of the Asset that is linked to the Calibration Template. | This field is disabled and populated with the value stored in the Serial Number field in the Asset that is linked to the Calibration Template. If you have accessed the template from the library, this field is disabled and blank. |
| Tag Description | Character | The description of the Asset to which the Calibration Template is linked. | This field is disabled and populated with the value stored in the Equipment Short Description field in the Asset that is linked to the Calibration Template. If you have accessed the template from the library, this field is disabled and blank. |
| Tag Name | Character | The ID of the Asset to which the Calibration Template is linked. | This field is disabled and populated with the value in the Equipment field in the Asset record that is linked to the Calibration Template. If you have accessed the template from the library, this field is disabled and blank. |
| Template ID | Character | The ID for the record. | This field is required and must be unique. |
| Template State | Character | The state of the Calibration Template. | This list contains the following values: <ul style="list-style-type: none"> • Development • Approved • Obsolete The default value is Development. |

Calibration Template, Single Component Analyzer Records

Calibration Template, Single Component Analyzer records store details about the single component analyzer calibration that should be performed for a specific asset. This topic provides an alphabetical list and description of the fields that exist for the Calibration Template, Single Component Analyzer family. The information in the table reflects the baseline state and behavior of these fields. This list is not comprehensive.

This family is enabled for site filtering, which means that records in this family can be assigned to a specific site and will only be accessible to users who are assigned to the same site and have the appropriate license and family privileges. For more information, refer to the [Sites](#) section of the documentation.

| Field | Data Type | Description | Behavior and Usage |
|----------------------|-----------|---|--|
| Asset Key | Numeric | The Entity Key of the Asset that is linked to the Calibration Template. | <p>This field does not appear on a datasheet by default. When you apply a Calibration Template to an Asset, the details of the Asset are retrieved based on the value in the Asset Key field.</p> <p>This field is used by the GE Digital APM system and should not be modified.</p> |
| Calibration Strategy | Character | The strategy for the single component analyzer calibration. | <p>This field contains a list of strategies for the single component analyzer calibration. This field is required. You can choose from the following strategies:</p> <ul style="list-style-type: none"> • 2 Up • 2 Down • 2 Up then 2 Down • 3 Up • 3 Down • 3 Up then 3 Down • 5 Up • 5 Down • 5 Up then 5 Down • 5 Up then 1 Down • 11 Up • 11 Down • 11 Up then 11 Down <p>Depending on the selection on the Calibration Template Detail, Analyzer record, the following fields are populated by default:</p> <ul style="list-style-type: none"> • Calibration Template Detail ID • Input Up/Dn • Percent of Scale Sequence Number • Percent of Scale Test Point <p>After you save the template, you cannot modify this field.</p> |
| Calibration Type | Character | The type of calibration for which you are creating the template. | This field is disabled and populated with the value ANALYZER-SINGLE COMPONENT by default. |

| Field | Data Type | Description | Behavior and Usage |
|-------------------------------|-----------|---|--|
| Engineering Units Error Limit | Numeric | A number representing the maximum amount of error in engineering units that is allowed before a calibration event is considered failed. | <p>The state of this field is dependent upon the state of other fields.</p> <ul style="list-style-type: none"> If the Error Assessment field in the Calibration Setup Defaults record contains the value Engineering Units, this field is populated with a default value from the Calibration Setup Defaults record. If the Error Assessment field in the Calibration Setup Defaults record contains the value Percent of Range, this field is disabled and blank. <p>You can modify the default value if required.</p> |
| Error Assessment | Character | The error calculation type that you will use to enter the calibration results. | <p>This field is populated with a default value from the Calibration Setup Defaults record. You can select one of the following values:</p> <ul style="list-style-type: none"> Percent of Range: When you select this value, the Max Error Limit field is enabled, and the Engineering Units Error Limit field is disabled. Engineering Units: When you select this value, the Engineering Units Error Limit field is enabled, and the Max Error Limit field is disabled. <p>You can change the value if required. This field is required.</p> |

| Field | Data Type | Description | Behavior and Usage |
|-----------------|-----------|--|---|
| Input Type | Character | The input type for the single component analyzer calibration. | <p>This field appears as a list that is populated by the MI CALIBRATION IO TYPES System Code Table. You can choose from the following input types:</p> <ul style="list-style-type: none"> • Current • Resistance • Voltage • Pulse • Other • HART <p>This field is required.</p> |
| Manufacturer | Character | The manufacturer of the Asset that is linked to the Calibration Template. | <p>This field is disabled and populated with the value stored in the Manufacturer field in the Asset that is linked to the Calibration Template. If you have accessed the template from the library, this field is disabled and blank.</p> |
| Max Error Limit | Numeric | The maximum percentage of error that is allowed before a calibration event is considered failed. | <p>The state of this field is dependent upon the state of other fields.</p> <ul style="list-style-type: none"> • If the Error Assessment field in the Calibration Setup Defaults record contains the value Engineering Units, this field is disabled and blank. • If the Error Assessment field in the Calibration Setup Defaults record contains the value Percent of Range, this field is populated with the value specified in the SC Analyzer Error Limit field in the Calibration Setup Defaults record. <p>You can modify this value if required.</p> |

| Field | Data Type | Description | Behavior and Usage |
|-------------------|-----------|---|---|
| Model Number | Character | The model number of the Asset that is linked to the Calibration Template. | This field is disabled and populated with the value stored in the Model Number field in the Asset that is linked to the Calibration Template. If you have accessed the template from the library, this field is disabled and blank. |
| Output Type | Character | The output type for the single component analyzer calibration. | This field appears as a list that is populated by the MI_CALIBRATION_IO_TYPES System Code Table. You can choose from the following output types: <ul style="list-style-type: none"> • Current • Resistance • Pulse • Voltage • Other • HART This field is required. |
| Primary Input LRV | Numeric | A number representing the lower range value for the primary input range. | This field is grouped with the following other fields in the Primary Input Details section: <ul style="list-style-type: none"> • Primary Input URV • Primary Input Range Units The value stored in the Primary Input LRV field combined with the value stored in the Primary Input URV field define the primary input range for the calibration. This field is required. |

| Field | Data Type | Description | Behavior and Usage |
|---------------------------|-----------|--|---|
| Primary Input Range Units | Character | The units of measure (UOM) for the primary input. | <p>This field is grouped with the following other fields in the Primary Input Details section:</p> <ul style="list-style-type: none"> • Primary Input LRV • Primary Input URV <p>This list contains a list of UOMs that is filtered based on the value in the Input Type field. This means that only the UOM values that are relevant for that input type will appear in the list. After you select a value in this list, the GE Digital APM system checks to see if the UOM is compatible with the device. If the selected values are not compatible, an error message appears, indicating the problem.</p> |
| Primary Input URV | Numeric | A number representing the upper range value for the primary input range. | <p>This field is grouped with the following other fields in the Primary Input Details section:</p> <ul style="list-style-type: none"> • Primary Input LRV • Primary Input Range Units <p>The value stored in the Primary Input URV field combined with the value stored in the Primary Input LRV field define the primary input range for the calibration. This field is required.</p> |

| Field | Data Type | Description | Behavior and Usage |
|----------------------------|-----------|---|---|
| Primary Output LRV | Numeric | A number representing the upper range value for the primary output range. | <p>This field is grouped with the following other fields in the Primary Output Details section:</p> <ul style="list-style-type: none"> • Primary Output URV • Primary Output Range Units <p>The value stored in the Primary Output LRV field combined with the value stored in the Primary Output URV field define the primary output range for the calibration. This field is required.</p> |
| Primary Output Range Units | Character | The units of measure (UOM) for the primary input. | <p>This field is grouped with the following other fields in the Primary Output Range section:</p> <ul style="list-style-type: none"> • Primary Output LRV • Primary Output URV <p>This field contains a list of UOMs that is filtered based on the value in the Output Type field. This means that only the UOM values that are relevant for that output type will appear in the list. This field appears as a list that is populated by the MI_CALIBRATION_IO_TYPES System Code Table. After you select a value in this list, the GE Digital APM system checks to see if the UOM is compatible with the device. If the selected values is not compatible, an error message appears, indicating the problem.</p> |

| Field | Data Type | Description | Behavior and Usage |
|------------------------|-----------|--|---|
| Primary Output URV | Numeric | A number representing the upper range value for the primary output range. | <p>This field is grouped with the following other fields in the Primary Output Details section:</p> <ul style="list-style-type: none"> Primary Output LRV Primary Output Range Units <p>The value stored in the Primary Output URV field combined with the value stored in the Primary Output LRV field define the primary output range for the calibration. This field is required.</p> |
| Refresh Equipment Data | Boolean | Indicates whether or not information in the Asset that is linked to the Calibration Template has been updated. | This field does not appear on the datasheet by default. This field is used by the GE Digital APM system and should not be modified. |
| Serial Number | Character | The serial number of the Asset that is linked to the Calibration Template. | This field is disabled and populated with the value stored in the Serial Number field in the Asset that is linked to the Calibration Template. If you have accessed the template from the library, this field is disabled and blank. |
| Tag Description | Character | The description of the asset, which is represented by the Asset that is linked to the Calibration Template. | This field is disabled and populated with the value stored in the Equipment Short Description field in the Asset that is linked to the Calibration Template. If you have accessed the template from the library, this field is disabled and blank. |
| Tag Name | Character | The ID of the Asset that is linked to the Calibration Template. | This field is disabled and populated with the value in the Equipment field in the Asset record that is linked to the Calibration Template. If you have accessed the template from the library, this field is disabled and blank. |

| Field | Data Type | Description | Behavior and Usage |
|----------------|-----------|--|--|
| Template ID | Character | The ID of the template. | This field is required and must be unique. |
| Template State | Character | The state of the Calibration Template. | This list contains the following values: <ul style="list-style-type: none"> • Development • Approved • Obsolete The default value is Development. |

Calibration Template, Weight Scale Records

Calibration Template, Weight Scale records store details on the weight scale calibration that should be performed for a specific asset. This topic provides an alphabetical list and description of the fields that exist for the Calibration Template, Weight Scale family and appear on the Calibration Template, Weight Scale datasheet. The information in the table reflects the baseline state and behavior of these fields. This list is not comprehensive.

This family is enabled for site filtering, which means that records in this family can be assigned to a specific site and will only be accessible to users who are assigned to the same site and have the appropriate license and family privileges. For more information, refer to the [Sites](#) section of the documentation.

| Field | Data Type | Description | Behavior and Usage |
|------------------|-----------|--|--|
| Asset Key | Numeric | The Entity Key of the Asset to which the Calibration Template is linked. This field is used by the GE Digital APM system and should not be modified. | This field does not appear on a datasheet by default. When you apply a Calibration Template to an Asset, the details of the Asset are retrieved based on the value in the Asset Key field. |
| Calibration Type | Character | The type of calibration for which you are creating the template. | This field is disabled and populated with the value ANALOG-MANUAL by default. |

| Field | Data Type | Description | Behavior and Usage |
|-------------------------------|-----------|---|--|
| Engineering Units Error Limit | Numeric | A number representing the maximum amount of error in engineering units that is allowed before a calibration event is considered failed. | <p>The state of this field is dependent upon the state of other fields.</p> <ul style="list-style-type: none"> If the Error Assessment field in the Calibration Setup Defaults record contains the value Engineering Units, this field is populated with a default value from the Calibration Setup Defaults record. If the Error Assessment field in the Calibration Setup Defaults record contains the value Percent of Range, this field is disabled and blank. <p>You can modify the default value if required.</p> |
| Error Assessment | Character | The error calculation type that you will use to enter the calibration results. | <p>This field is populated with a default value from the Calibration Setup Defaults record. You can select one of the following values:</p> <ul style="list-style-type: none"> Percent of Range: When you select this value, the Max Error Limit field is enabled, and the Engineering Units Error Limit field is disabled. Engineering Units: When you select this value, the Engineering Units Error Limit field is enabled, and the Max Error Limit field is disabled. <p>You can change the value if required. This field is required.</p> |

| Field | Data Type | Description | Behavior and Usage |
|-----------------|-----------|--|--|
| Input Type | Character | The input type for the weight scale calibration. | <p>This field appears as a list that is populated by the MI CALIBRATION IO TYPES System Code Table. You can choose from the following input types:</p> <ul style="list-style-type: none"> • Weight • Voltage • Current • Other <p>This field is required.</p> |
| Manufacturer | Character | The manufacturer of the Asset that is linked to the Calibration Template. | <p>This field is disabled and populated with the value stored in the Manufacturer field in the Asset that is linked to the Calibration Template. If you have accessed the template from the library, this field is disabled and blank.</p> |
| Max Error Limit | Numeric | A number that represents the maximum amount of error in percent that is allowed before a calibration event is considered failed. | <p>The state of this field is dependent upon the state of other fields.</p> <ul style="list-style-type: none"> • If the Error Assessment field in the Calibration Setup Defaults record contains the value Engineering Units, this field is disabled and blank. • If the Error Assessment field in the Calibration Setup Defaults record contains the value Percent of Range, this field is populated with a default value as specified in the Weight Scale Error Limit field in the Calibration Setup Defaults record. <p>This field includes an additional label: PCT. This field is populated with the value specified in the Weight Scale Error Limit field in the Calibration Setup Defaults record. You can modify this value if required.</p> |

| Field | Data Type | Description | Behavior and Usage |
|-------------------|-----------|---|---|
| Model Number | Character | The model number of the Asset that is linked to the Calibration Template. | This field is disabled and populated with the value stored in the Model Number field in the Asset that is linked to the Calibration Template. If you have accessed the template from the library, this field is disabled and blank. |
| Output Type | Character | The output type for the weight scale calibration. | This field appears as a list that is populated by the MI_CALIBRATION_IO_TYPES System Code Table. You can choose from the following output types: <ul style="list-style-type: none"> • Pressure • Temperature • Flow • Level • Weight • Voltage • Current • Frequency • Resistance • Other This field is required. |
| Primary Input LRV | Numeric | A number representing the lower range value for the primary input range. | This field is grouped with the following other fields in the Primary Input Details section: <ul style="list-style-type: none"> • Primary Input URV • Primary Input Range Units The value stored in the Primary Input LRV field combined with the value stored in the Primary Input URV field define the primary input range for the calibration. This field is required. |

| Field | Data Type | Description | Behavior and Usage |
|---------------------------|-----------|--|--|
| Primary Input Range Units | Character | The units of measure (UOM) for the primary input. | <p>This field is grouped with the following other fields in the Primary Input Details section:</p> <ul style="list-style-type: none"> • Primary Input LRV • Primary Input URV <p>This field contains a list of units of measure that is filtered based on the value in the Input Type field. This means that only the UOM values that are relevant for that input type will appear in the list. After you select a value in this list, the GE Digital APM system checks to see if the UOM is compatible with the Fluke device. If the selected value is not compatible, an error message will appear, indicating the problem.</p> |
| Primary Input URV | Numeric | A number representing the upper range value for the primary input range. | <p>This field is grouped with the following other fields in the Primary Input Details section:</p> <ul style="list-style-type: none"> • Primary Input LRV • Primary Input Range Units <p>The value stored in the Primary Input URV field combined with the value stored in the Primary Input LRV field define the primary input range for the calibration. This field is required.</p> |

| Field | Data Type | Description | Behavior and Usage |
|----------------------------|-----------|---|---|
| Primary Output LRV | Numeric | A number representing the lower range value for the primary output range. | <p>This field is grouped with the following other fields in the Primary Output Details section:</p> <ul style="list-style-type: none"> • Primary Output URV • Primary Output Range Units <p>The value stored in the Primary Output LRV field combined with the value stored in the Primary Output URV field define the primary output range for the calibration. This field is required.</p> |
| Primary Output Range Units | Character | The units of measure for the primary input. | <p>This field is grouped with the following other fields in the Primary Output Details section:</p> <ul style="list-style-type: none"> • Primary Output LRV • Primary Output URV <p>This field contains a list of units of measure that is filtered based on the value in the Output Type field. This means that only the UOM values that are relevant for that output type will appear in the list. After you select a value in this list, the GE Digital APM system verifies if the UOM is compatible with the Fluke device. If the selected values are not compatible, an error message will appear, indicating the problem. This field appears as a list that is populated by the MI_CALIBRATION_IO_TYPES System Code Table.</p> |

| Field | Data Type | Description | Behavior and Usage |
|------------------------|-----------|--|---|
| Primary Output URV | Numeric | A number representing the upper range value for the primary output range. | <p>This field is grouped with the following other fields in the Primary Output Details section:</p> <ul style="list-style-type: none"> • Primary Output LRV • Primary Output Range Units <p>The value stored in the Primary Output URV field combined with the value stored in the Primary Output LRV field define the primary output range for the calibration. This field is required.</p> |
| Refresh Equipment Data | Boolean | Indicates whether or not information in the Asset that is linked to the Calibration Template has been updated. This field is used by the GE Digital APM system and should not be modified. | This field does not appear on a datasheet by default. |
| Serial Number | Character | The serial number of the Asset that is linked to the Calibration Template. | This field is disabled and populated with the value stored in the Serial Number field in the Asset that is linked to the Calibration Template. If you have accessed the template from the library, this field is disabled and blank. |
| Tag Description | Character | The description of the asset, which is represented by the Asset that is linked to the Calibration Template. | This field is disabled and populated with the value stored in the Equipment Short Description field in the Asset that is linked to the Calibration Template. If you have accessed the template from the library, this field is disabled and blank. |

| Field | Data Type | Description | Behavior and Usage |
|----------------|-----------|--|--|
| Tag Name | Character | The ID of the Asset that is linked to the Calibration Template. This is the Asset ID of the asset. | This field is disabled and populated with the value in the Equipment field in the Asset record that is linked to the Calibration Template. If you have accessed the template from the library, this field is disabled and blank. |
| Template State | Character | The state of the Calibration Template. | This field contains the following values: <ul style="list-style-type: none"> • Development • Approved • Obsolete By default, this field contains the value Development. |


Recommendation Records

Recommendation records store details about the recommendation that you have proposed to improve the calibration.

This family is enabled for site filtering, which means that records in this family can be assigned to a specific site and will only be accessible to users who are assigned to the same site and have the appropriate license and family privileges. For more information, refer to the [Sites](#) section of the documentation.


This topic provides an alphabetical list and description of the fields that exist for the Recommendation family. These fields appear on the Recommendation datasheet, unless otherwise specified. The information in this table reflects the baseline state and behavior of these fields. This list is not comprehensive.

| Field | Data Type | Description | Behavior and Usage |
|--------------------------|-----------|---|---|
| Alert Assignee When Due? | Boolean | Indicates whether an email notification must be sent to the user selected in the Assigned To Name field when the recommendation is due. | This field appears in the Alert datasheet. |
| Assigned To Name | Character | The name of the user who is assigned the Recommendation. | You can select a user from the list. |
| Author Lock | Boolean | Indicates whether the fields in the Recommendation must be disabled after entering the values. | After you select this check box, it is disabled. All the other fields are also disabled after you provide values. |

| Field | Data Type | Description | Behavior and Usage |
|----------------------------------|-----------|--|---|
| Author Name | Character | The first and last name of the Security User who created the Recommendation. | This field is populated with the name of the user who was logged in while creating the Recommendation. |
| Business Impact | Character | The impact to the business if the recommended action is performed. | This field appears as a list that is populated by the MI_BUSINESS_IMPACT System Code Table. You can choose from the following baseline values: <ul style="list-style-type: none"> • Facility Shutdown (FACILITY SHUTDOWN) • Facility Slowdown (FACILITY SLOWDOWN) • Unit Shutdown (UNIT SHUTDOWN) • Unit Slowdown (UNIT SLOWDOWN) • System Shutdown (SYSTEM SHUTDOWN) • System Slowdown (SYSTEM SLOWDOWN) |
| Calibration Recommendation Basis | Character | The basis for the Recommendation. | This field is populated automatically with the value stored in the Event ID field in the existing calibration event. |
| Calibration Type | Character | The type of the Calibration that you have performed. | This field is disabled and populated with the value in the Calibration Type field in the Calibration. |
| Completed Date | Date | The date on which the recommended action was performed. | This field contains a  button, which you can select to access the Calendar feature. |
| Completion Comments | Character | Comments on how the recommended action has been completed. | You can enter a value manually. |
| Create Work Request? | Boolean | Specifies whether a work request should be created in an external EAM system when this Recommendation is saved (e.g., using functionality provided with the SAP Interfaces, Oracle EBS EAM Interfaces, and Maximo Interfaces). | You can select the check box if you want a work request to be created in an external EAM system. |

| Field | Data Type | Description | Behavior and Usage |
|-------------------------------------|-----------|--|---|
| Creation Date | Date | The date on which the Recommendation was created. | This field is disabled and populated with the date on which the Recommendation is created. |
| Days Before Due Date to be Notified | Numeric | The number of days before the Target Completion Date that an email notification must be sent to the user selected in the Assigned To Name field. | This field appears in the Alert datasheet. This field is required when the Alert Assignee When Due check box is selected. |
| Equipment ID | Character | The Asset that is associated with the Calibration for which you are proposing the Recommendation. | This field is disabled and populated with the value stored in the Equipment ID field in the Calibration datasheet. |
| Final Approver Name | Character | The name of the user who must grant the final approval for the Recommendation. | You can select a user from the list. |
| Final State Lock | Boolean | Indicates whether the Recommendation fields should be disabled from modifying. | When you select this check box, all the fields in the Recommendation are disabled. |
| Frequency of Alert After Due Date | Numeric | Specifies how often email messages will be sent after the completion date has passed. | You can choose any of the following options: <ul style="list-style-type: none"> • Never • Daily • Weekly • Monthly • Yearly This field appears in the Alert datasheet. This field is required when the Alert Assignee When Due check box is selected. |
| Functional Location ID | Character | The Functional Location that is associated with the Calibration for which you are proposing the Recommendation. | This field is disabled and populated with the value stored in the Functional Location ID field in the Calibration datasheet. |
| Implementation Alert Text | Character | The text that will be included in the email notification sent to the approver. | This field appears in the Alert datasheet. |
| Implemented Date | Date | The date on which the recommended action has been implemented. | This field contains a  button, which you can select to access the Calendar feature. |

| Field | Data Type | Description | Behavior and Usage |
|--------------------------------|-----------|--|--|
| Insert Units | Character | The units of the interval at which an email notification is to be sent to the assignee. | For example, if the value in this field is Days, and if the value in the Interval field is 4, then an email notification is sent to the assignee every four days. This field appears in the Alert datasheet. |
| Interval | Numeric | The interval at which an email alert has to be sent to the assignee. | For example, if the value in this field is 4, and if the value in the Interval Units field is Days, then an email notification is sent to the assignee every four days. This field appears in the Alert datasheet. |
| Mandatory Date | Date | The date by which the recommended action must be completed if it was not completed by the target completion date. | This field contains a  button, which you can select to access the Calendar feature. |
| Reevaluate? | Boolean | Indicates whether you want to reevaluate the Recommendation. | This field appears in the Alert datasheet. |
| Reevaluation Alert Body Text | Character | The text that will be included in the reevaluation email message. | This field appears in the Alert datasheet. This field is enabled only when the Reevaluate? check box is selected. |
| Reevaluation Date | Date | The date on which a reevaluation email message will be sent to the users selected in the Reevaluation Notification List field. | This field appears in the Alert datasheet. This field is required when the Reevaluate? check box is selected. |
| Reevaluation Notification List | Character | The users to whom the reevaluation email message will be sent. | This field appears in the Alert datasheet. This field is enabled and is required when the Reevaluate? check box is selected. |
| Recommendation Description | Character | A description of the Recommendation. | You can enter a value manually. |
| Recommendation Headline | Character | A short description of the Recommendation. | If you select the Alert Assignee When Due check box, the value that you provide in the Recommendation Headline field becomes the subject of the alert email. |
| Recommendation ID | Character | The ID for the Recommendation | This value must be unique. |

| Field | Data Type | Description | Behavior and Usage |
|---------------------------|-----------|--|--|
| Recommendation Priority | Character | The priority of the recommended action. | This field appears as a list that is populated by the MI_PRIORITY System Code Table. You can choose from the following baseline values: <ul style="list-style-type: none"> High (HIGH) Medium (MEDIUM) Low (LOW) |
| Required Equipment Status | Character | The state in which the asset should exist before performing the recommended action against it. | This field appears as a list that is populated by the MI_STATUS System Code Table. You can choose from the following baseline values: <ul style="list-style-type: none"> On-line (ON-LINE) Off-line (OFF-LINE) Not Applicable (N/A) |
| Reviewer Name | Character | The name of the user who will review the Recommendation. | You can select a user from the list. |
| Status | Character | The status of the Recommendation. | This field contains a list of the following states: <ul style="list-style-type: none"> Created Pending Review Reviewed Rejected Cancelled Superseded |
| Target Completion Date | Date | The date by which the recommended action should be completed. | This field contains a  button, which you can select to access the Calendar feature. |
| Technical Number | Character | The technical number of the Recommendation. | This field is disabled. |
| Work Request Equipment | Character | The ID of the external asset that is associated with the external work request that was created from this Recommendation (e.g., using functionality provided with the SAP Interfaces, Oracle EBS eAM Interfaces, and Maximo Interfaces). | This field is disabled and populated after the external work request is created. |

| Field | Data Type | Description | Behavior and Usage |
|----------------------------------|-----------|---|--|
| Work Request Functional Location | Character | The ID of the external location that is associated with the external work request that was created from this Recommendation (e.g., using functionality provided with the SAP Interfaces, Oracle EBS eAM Interfaces, and Maximo Interfaces). | This field is disabled and populated after the external work request is created. |
| Work Request Reference | Character | The ID of the external work request that was created from this Recommendation (e.g., using functionality provided with the SAP Interfaces, Oracle EBS EAM Interfaces, and Maximo Interfaces). | This field is disabled and populated after the SAP Notification or Oracle EBS EAM Work Request is created. |

Standard Gas Component Records

Standard Gas Component records store details about a gas component that is part of a standard gas cylinder.

This family is enabled for site filtering, which means that records in this family can be assigned to a specific site and will only be accessible to users who are assigned to the same site and have the appropriate license and family privileges. For more information, refer to the [Sites](#) section of the documentation.

This topic provides an alphabetical list and description of the fields that exist for the Standard Gas Component family. The information in the table reflects the baseline state and behavior of these fields.

| Field | Data Type | Description | Behavior and Usage |
|-------------------|-----------|--|--|
| Analytical Result | Numeric | The concentration of the component as found by third party verification. | This value must fall within the tolerance that you have specified for the value in the Requested field. For example, consider the following values: <ul style="list-style-type: none"> Requested = 60 ppm Tolerance = 1 ppm Then, the value in the Analytical Result must fall between 59 ppm and 61 ppm. Otherwise, an error message appears. |
| Balance | Boolean | Indicates whether the component is the balance component. | You can select only one component as balance among all the components in the cylinder. |

| Field | Data Type | Description | Behavior and Usage |
|-------------|-----------|--|---|
| Component | Character | The name of the component. | This field appears as a list that is populated by the MI_CHEMICAL_COMPONENTS System Code Table. The component that you select must be unique among the ones linked to the same Standard Gas Cylinder. |
| Cylinder ID | Character | The ID of the Standard Gas Cylinder record that is linked to this Standard Gas Component record. | This field is disabled and populated. |
| Requested | Character | The concentration of the component that has been requested. | You can enter a value manually. |
| Tolerance | Numeric | The percentage of variation from the specified value of the composition of the component. | You can enter a value manually. |
| Units | Character | The units of measure for the composition of the component. | Select from the list of values that have been specified in the system code table. |

Standard Gas Cylinder Records

Standard Gas Cylinder records store details about a gas cylinder of known components that is used to calibrate a device.

This family is enabled for site filtering, which means that records in this family can be assigned to a specific site and will only be accessible to users who are assigned to the same site and have the appropriate license and family privileges. For more information, refer to the [Sites](#) section of the documentation.

The following table provides an alphabetical list and description of the fields that exist for the Standard Gas Cylinder family. The information in the table reflects the baseline state and behavior of these fields.

| Field | Data Type | Description | Behavior and Usage |
|----------------------------|-----------|--|--|
| Actual Sample Volume | Numeric | The volume of the sample in the cylinder. | You can enter a value manually. |
| Cylinder Connection Number | Character | A number that represents the cylinder connection specification as per standards. | This field appears as a list that is populated by the MI_GAS_CYLINDER_CONNECTION_NUMBER System Code Table. |
| Cylinder Description | Character | A description of the cylinder. | You can enter a description of the cylinder. |

| Field | Data Type | Description | Behavior and Usage |
|--------------------------------|-----------|--|---|
| Cylinder Identification Number | Character | The ID of the cylinder. | You can enter a value manually. This field is required. |
| Cylinder Manufacturer | Character | The manufacturer of the cylinder. | You can enter a value manually. |
| Cylinder Owner | Character | The person who is responsible for the cylinder. | You can enter a value manually. |
| Cylinder Size | Character | The size specifications of the cylinder. | This field contains a list of specifications from which you can select the appropriate size. This field appears as a list that is populated by the MI_GAS_CYLINDER_SIZE System Code Table. |
| Cylinder Type | Character | The type of the cylinder. | This field appears as a list that is populated by the MI_GAS_CYLINDER_TYPE System Code Table. This field contains a list of types from which you can select the appropriate Calibration type. |
| Expiration Date | Date | The date on which the cylinder can no longer be used. | You must select a date using the calendar. |
| In Service Date | Date | The date on which the cylinder became available for use. | You must select a date using the calendar. |
| Laboratory Number | Character | The number assigned to the cylinder for testing in a laboratory. | You can enter a value manually. |
| Min Cylinder Pressure | Character | The minimum acceptable pressure that must be maintained in the cylinder. | You can enter a value manually. |

Test Equipment History Records

Test Equipment History records store details about the certification history of a piece of test equipment.

This family is enabled for site filtering, which means that records in this family can be assigned to a specific site and will only be accessible to users who are assigned to the same site and have the appropriate license and family privileges. For more information, refer to the [Sites](#) section of the documentation.

The following table provides an alphabetical list and description of the fields that exist for the Test Equipment History family and appear on the Test Equipment History datasheet by default. The information in the table reflects the baseline state and behavior of these fields.

| Field | Data Type | Description | Behavior and Usage |
|----------------------|-----------|---|---|
| Certification Date | Date | The date on which that the test equipment was certified. | This field is required. You must select a date using the calendar. After the Test Equipment History is saved, this field is disabled. The Last Certification Date field of the Test Equipment is populated with the latest of the certification dates of all the Test Equipment Histories linked to the test equipment. |
| Certification Number | Character | The certification number that is assigned to the test equipment by the certification organization identified in the Supplier field. | This field is required. After the Test Equipment History is saved, this field is disabled. |
| Entered By | Character | The user ID of the Security User who created the Test Equipment History. | This field is disabled and populated with the user ID of the Security User who was logged in when the Test Equipment History was created. |
| Supplier | Character | The third party organization that certified the piece of test equipment. | This field is required. After the Test Equipment History is saved, this field is disabled. |

Test Equipment Records

Test Equipment records store details about a piece of test equipment that is used to perform calibrations.

This family is enabled for site filtering, which means that records in this family can be assigned to a specific site and will only be accessible to users who are assigned to the same site and have the appropriate license and family privileges. For more information, refer to the [Sites](#) section of the documentation.

This topic provides an alphabetical list and description of the fields that exist for the Test Equipment family and appear on the datasheet by default. The information in the table reflects the baseline state and behavior of these fields.

| Field | Data Type | Description | Behavior and Usage |
|-------------|-----------|---|-------------------------------------|
| Assigned To | Character | The person to which the test equipment is assigned. In other words, the person who is responsible for the test equipment. | You can define this field manually. |
| Category | Character | The category of the test equipment. | You can define this field manually. |

| Field | Data Type | Description | Behavior and Usage |
|---|-----------|---|---|
| Certification Due | Date | The date on which certification is due for the test equipment. | This field is disabled and populated with the value calculated as follows: Certification Due = Last Certification Date + Certification Interval |
| Certification Interval | Numeric | A number that, along with the unit of measure stored in the Certification Units field, represents the amount of time that is required between certifications. | This field is populated with 1 by default. |
| Certification Status | Character | A value that indicates whether or not the test equipment is currently certified. | This field is disabled. If the date stored in the Certification Due field has passed, this field is populated with the value Out of Cert to indicate that the test equipment is no longer certified. Otherwise, this field is populated with the value Certified. |
| Certification Supplier is ISO/IEC 17025 Certified | Character | Indicates that the organization that certified the device uses a work process that is in compliance with the certification standard ISO/IEC 17025. | You can define this field manually. |
| Certification Units | Character | The time unit associated with the certification interval identified in the Certification Interval field. | This field contains the following options: <ul style="list-style-type: none"> • Minutes • Hours • Days • Weeks • Months • Years This field is populated with the value Years by default. |
| Check Interval | Numeric | A number that, along with the unit of measure stored in the Check Interval Units field, represents the amount of time that is required between test equipment checks. | You must type a numeric value into this field. Otherwise, an error message will appear. |

| Field | Data Type | Description | Behavior and Usage |
|-------------------------|-----------|---|--|
| Check Interval Units | Character | The time unit associated with the check interval identified in the Check Interval field. | This field contains the following options: <ul style="list-style-type: none"> • Minutes • Hours • Days • Weeks • Months • Years This field is populated with the value Years by default. |
| Class | Character | The class of the test equipment. | You can define this field manually. |
| Description | Character | A description of the test equipment. | You can define this field manually. |
| Equipment ID | Character | The ID of the test equipment. | On the datasheet, this field appears as a text box labeled Test Equipment ID. This field is required and must be unique. |
| Last Certification Date | Date | The most recent date on which the test equipment was certified. | This field is populated with the latest of the certification dates of all the Test Equipment History records linked to the test equipment. |
| Last Check Date | Date | The most recent date on which the test equipment was checked. | You must select a date using the calendar. |
| Maintenance Plant | Character | The plant to which the test equipment is assigned. In other words, the plant where the test equipment is located. | You can define this field manually. |
| Manufacturer | Character | The manufacturer of the test equipment. | This field is required. |
| Model Number | Character | The model number of the test equipment. | This field is required. |

| Field | Data Type | Description | Behavior and Usage |
|----------------------------|-----------|---|--|
| Next Certification | Date | The date on which the next certification of the test equipment is due. | This field is disabled and populated with the next certification date. This value is calculated by adding the value stored in the Certification Interval field to the value stored in the Last Certification Date field. For example, if the Last Certification Date field contains the date 4/1/2015, the Certification Interval field contains the value 1, and the Certification Units field contains the value Years, the value stored in the Next Certification field will be 4/1/2016. |
| NIST Traceability Required | Character | Indicates that the test equipment performs calibrations using a standard that can be traced back to a valid standard with regards to the National Institute of Standards and Technology (NIST). | You can define this field manually. |
| Purchase Date | Date | The date on which the test equipment was purchased. | You must select a date using the calendar. |
| Purchase Order Number | Character | The order number that was used to purchase the test equipment. | You can define this field manually. |
| Serial Number | Character | The serial number of the test equipment. | This field is required. |
| Test Equipment ID | Character | The ID for the test equipment. | This field is required and must be unique. |
| Type | Character | The type of test equipment. | You can define this field manually. |
| Vendor | Character | The vendor from which the test equipment was purchased. | You can define this field manually. |

Instrumentation System Records

The Instrumentation System records store information about the fields that are defined in the Instrumentation System family in the baseline GE Digital APM database. This topic provides an alphabetic list and description of the fields that exist for the Instrumentation System family and appear on the Instrumentation System datasheet. The information in the table reflects the baseline state and behavior of these fields.

This family is enabled for site filtering, which means that records in this family can be assigned to a specific site and will only be accessible to users who are assigned to the same site and have the appropriate license and family privileges. For more information, refer to the [Sites](#) section of the documentation.

| Field | Data Type | Description | Behavior and Usage |
|--------------------|-----------|---------------------------------------|---|
| Asset ID | Character | Instrumentation System Asset ID | This field displays the ID of the asset linked to the Instrumentation System. An asset can be either Equipment or Functional Location. This field is disabled after the record is saved. |
| Asset Key | Character | Instrumentation System Asset Key | This field stores the asset key linked to the Instrumentation System. An asset can be either Equipment or Functional Location. This field is not on the datasheet and is disabled by default. |
| Description | String | Instrumentation System Description | This field is used to provide additional description about the Instrumentation System record. |
| Instrumentation ID | Character | Unique name of Instrumentation System | This is a mandatory field and should be unique. |

Calibration, Summary Event Records

Calibration, Summary Event records store information about the fields that are defined in the Calibration, Summary Event family in the baseline GE Digital APM database. This topic describes the fields that appear on the Calibration, Summary Event datasheet. The information in the table reflects the baseline state and behavior of these fields. Refer to the [Calibration Records](#) section for other fields that are not listed here.

This family is enabled for site filtering, which means that records in this family can be assigned to a specific site and will only be accessible to users who are assigned to the same site and have the appropriate license and family privileges. For more information, refer to the [Sites](#) section of the documentation.

| Field | Data Type | Description | Behavior and Usage |
|-------------------------|-----------|--|--|
| Asset ID | Character | Instrumentation System Asset ID | This field displays the ID of the asset linked to the Instrumentation System. The asset can be either Equipment or Functional Location. This is a read-only field. |
| Calibration Template ID | Character | Calibration Template linked to the Instrumentation System's asset. | This field is used to provide calibration steps to create a Summary Event. This field is read-only and is not a mandatory field. |

| Field | Data Type | Description | Behavior and Usage |
|----------------------|-----------|---|--|
| Calibration Task ID | Character | Calibration Task linked to the Instrumentation System's asset. | This field is used to indicate the Calibration Task that is linked to the Instrumentation System's asset. This field is read-only and is not a mandatory field. |
| Ad-Hoc Calibration | Boolean | Indicates that the calibration is performed on the asset that needs to be calibrated outside of its calibration schedule. For example, suppose an asset has an annual calibration task in January. If the asset needs repair or replacement during the year, the asset should be calibrated after it is repaired or replaced. An ad-hoc calibration is performed in this scenario. | By default, this check box is cleared. If you select this check box, the associated Calibration Task is not recycled after you perform the calibration. |
| Overall AF Pass/Fail | Character | A value that indicates whether the calibration has passed or failed based on Overall AF Pass/Fail values of the underlying child calibration events. | This field is used to indicate the Calibration Result of the Instrumentation System. This is a read-only field. This field is set to PASS if the Overall AF Pass/Fail for all the child events is set to PASS. This field is set to FAIL if the Overall AF Pass/Fail for any of the child events is set to FAIL. |
| Overall AL Pass/Fail | Character | A value that indicates whether the calibration has passed or failed based on the Overall AL Pass/Fail values of the underlying child calibration events. | This field is used to indicate the Calibration Result of the Instrumentation System. This is a read-only field. This field is set to PASS if the Overall AL Pass/Fail for all child events is set to PASS. This field is set to FAIL if the Overall AL Pass/Fail of any of the child events is set to FAIL. |

Calibration Task Scope Records

Calibration Task Scope records stores information about the defined task scope of an Instrumentation System's Calibration Task. One Instrumentation System can have one or more Calibration Tasks and each task is linked to a Calibration Task Scope record.

Calibration Task Scope records are not displayed to users. These records are maintained in the backend to track the task scope of the Calibration Task in an Instrumentation System.

This family is not enabled for site filtering, which means that records in this family can be accessed by any user with the appropriate license and family privileges. For more information, refer to the [Sites](#) section of the documentation.

The following fields are associated with this record.

| Field | Data Type | Description | Behavior and Usage |
|-------------------------------|-----------|---|---|
| Calibration Task Scope ID | Character | A unique ID to maintain the task scope records. | N/A |
| Calibration Summary Event Key | Character | Stores the entity key of the Calibration, Summary Event record, which is linked to the Instrumentation System's parent asset. | N/A |
| Calibration Task Scope Status | Boolean | Stores either Y or N to indicate whether the current task scope is in active state. | This field is set to Y when the task scope is created, and N when the Calibration Task is recycled. On recycling the task, a new task scope record is created. |
| Scope Created Date | Date Time | Sets the current date and time when the task scope record is created, | N/A |
| Scope Closed Date | Date Time | Sets the current date and time when the Calibration Task is recycled. | N/A |

Calibration Task Scope Detail Records

The Calibration Task Scope Detail records store child assets, their applied templates, and calibration event key values to indicate that they are part of the current task scope. A record is created when you select the templates and save the task scope of the selected Calibration Task.

Calibration Task Scope Detail records are not displayed to users. These records are maintained in the backend to track the task scope details of the Calibration Task in an Instrumentation System.

This family is not enabled for site filtering, which means that records in this family can be accessed by any user with the appropriate license and family privileges. For more information, refer to the [Sites](#) section of the documentation.

The following fields are associated with this record.

| Field | Data Type | Description | Behavior and Usage |
|--------------|-----------|---|---|
| Asset Key | Character | Entity key of the child asset. | Entity key of the child asset stored in the current task scope defined for the Calibration Task. When the asset is removed from Instrumentation System, the complete record where this Asset Key is present is removed from the Calibration Task Scope Detail table. |
| Template Key | Character | Stores the entity key of the Calibration, Summary Event record, which is linked to the Instrumentation System's parent asset. | Entity key of the calibration template linked to the child asset. This key is stored in the current task scope defined for the Calibration Task. This field is cleared from the Calibration Task Scope Detail table when you clear this template from the task scope. |
| Event Key | Character | Stores either Y or N to indicate whether the current task scope is in active state. | Entity key of the Calibration Event linked to the child asset. This key is stored in the current task scope defined for the Calibration Task. This field is cleared from the Calibration Task Scope Detail table when you remove the asset or delete this calibration event. |

Instrumentation System Relationship Families

Instrumentation System is an Asset

| Predecessor | Successor | Cardinality Ratio |
|------------------------|----------------------------------|-------------------|
| Instrumentation System | Equipment or Functional Location | 1 : 1 |

Instrumentation System has Assets

| Predecessor | Successor | Cardinality Ratio |
|------------------------|----------------------------------|-------------------|
| Instrumentation System | Equipment or Functional Location | N : N |

Calibration Task has Scope

| Predecessor | Successor | Cardinality Ratio |
|------------------|------------------------|-------------------|
| Calibration Task | Calibration Task Scope | 1 : N |

Calibration Task Scope has Details

| Predecessor | Successor | Cardinality Ratio |
|------------------------|--------------------------------|-------------------|
| Calibration Task Scope | Calibration Task Scope Details | 1 : N |

Calibration Event has Child Events

| Predecessor | Successor | Cardinality Ratio |
|----------------------------|-------------------------------|-------------------|
| Calibration, Summary Event | Calibration, Analog | 1 : N |
| Calibration, Summary Event | Calibration, Discrete | 1 : N |
| Calibration, Summary Event | Calibration, Functional Test | 1 : N |
| Calibration, Summary Event | Calibration, Single Component | 1 : N |
| Calibration, Summary Event | Calibration, Multi Component | 1 : N |
| Calibration, Summary Event | Calibration, Weight Scale | 1 : N |
| Calibration, Summary Event | Calibration, CMX | 1 : N |

Catalog Items

Calibration Management: Catalog Items

The Catalog folder `\\Public\Meridium\Modules\Calibration Management` contains the following items.

- GE Druck Folder
- Graphs Folder
- Queries Folder
- Reports Folder

GE Druck Folder

The Catalog folder `\\Public\Meridium\Modules\Calibration Management\GE Druck\Queries` contains the following items.

| Item Name | Behavior and Usage |
|-------------------------|--|
| DPI 612 Receive Query | Returns the list of fields to be displayed when receiving data from a GE Druck DPI612 device. |
| DPI 620 Receive Query | Returns the list of fields to be displayed when receiving data from a GE Druck DPI620 device. |
| DPI620SendQuery | Returns the list of fields to be displayed when sending data to a GE Druck DPI620 device for the specified Template ID(s). |
| DPI620SendQuery Display | Returns the list of fields to be displayed when sending data to a GE Druck DPI620 device for the specified Template ID(s). |
| DPIPCSendQuery | Returns the list of fields to be displayed when sending data to a GE Druck DPI61x device for the specified Template ID(s). |
| DPIPCSendQuery Display | Returns the list of fields to be displayed when sending data to a GE Druck DPI61x device for the specified Template ID(s). |

Graphs Folder

The Catalog folder \\Public\Meridium\Modules\Calibration Management\Graphs contains the following items.

| Graph Name | Behavior and Usage |
|--|--|
| Analog Calibration Error Graph | This graph shows the EventKey prompt for the Entity Key of the Calibration, Analog record, and then displays, in a line graph, a summary of the As Found, As Left, negative, and positive error limit data for the specified record. |
| Analog Calibration Measure Graph | This graph shows the EventKey prompt for the Entity Key of the Calibration, Analog record, and then displays, in a line graph, a summary of the output As Found, output As Left, and expected data for the specified record. |
| Analyzer Multi-Component Calibration Error Graph | This graph shows the EventKey prompt for the Entity Key of the Calibration, Analyzer Multi-Component record, and then displays, in a bar graph, the positive error, negative error, As Found error, and As Left error limit values for the specified record. |
| Analyzer SingleComponent Calibration Error Graph | This graph shows the EventKey prompt for the Entity Key of the Calibration, Analyzer Single Component record, and then displays, in a line graph, the positive error, negative error, As Found error, and As Left error limit values for the specified record. |
| Analyzer SingleComponent Calibration Measure Graph | This graph shows the EventKey prompt for the Entity Key of the Calibration, Analyzer Single Component record, and then displays, in a line graph, the primary output As Found and primary output As Left values for the specified record. |

| Graph Name | Behavior and Usage |
|-------------------------------|---|
| Calibration Error Trend Graph | <p>This graph shows the following prompts, and then displays, in a line graph, the overall As Found max error, overall As Found RMS error, overall As Left max error, and overall As Left RMS error values for the specified record.</p> <ul style="list-style-type: none"> • Range: Lets you specify the time span in which the calibration events whose results you want to include in the graph took place. You can choose from the following values: <ul style="list-style-type: none"> ◦ Last 1 month ◦ Last 3 months ◦ Last 1 year ◦ Last 3 years ◦ All • Family: Lets you specify the Calibration Event family whose record you want to include in the graph. The Family list contains the family captions for the Calibration Event families (except the Calibration, Discrete family) as they appear in the database. You can choose from the following values: <ul style="list-style-type: none"> ◦ MI_EVCAANLG: The Calibration, Analog family caption. ◦ MI_EVCAANMC: The Calibration, Analyzer Multi-Component family caption. ◦ MI_EVCAANSC: The Calibration, Analyzer Single Component family caption. • EventPred: Lets you specify the Entity Key for the Asset record to which Calibration Event records are linked. |

| Graph Name | Behavior and Usage |
|---------------------------------------|---|
| Calibration Pass Fail Trend Graph | <p>This graph shows the following prompts, and then displays, in a line graph, the overall as found max error, overall As Found RMS error, overall As Left max error, and overall As Left RMS error values for the specified record.</p> <ul style="list-style-type: none"> • Range: Lets you specify the time span in which the calibration events whose results you want to include in the graph took place. You can choose from the following values: <ul style="list-style-type: none"> ◦ Last 1 month ◦ Last 3 months ◦ Last 1 year ◦ Last 3 years ◦ All • Family: Lets you specify the Calibration Event family whose record you want to include in the graph. The Family list contains the family captions for the Calibration Event families (except the Calibration, Discrete family) as they appear in the database. You can choose from the following values: <ul style="list-style-type: none"> ◦ MI_EVCAANLG: The Calibration, Analog family caption. ◦ MI_EVCAANMC: The Calibration, Analyzer Multi-Component family caption. ◦ MI_EVCAANSC: The Calibration, Analyzer Single Component family caption. • EventPred: Lets you specify the Entity Key for the Asset record to which Calibration Event records are linked. |
| WeightScale Calibration Error Graph | <p>This graph shows the EventKey prompt for the Entity Key of the Calibration, Weight Scale record, and then displays, in a line graph, a summary of the As Found, As Left, negative, and positive error limit data for the specified record.</p> |
| WeightScale Calibration Measure Graph | <p>This graph shows the EventKey prompt for the Entity Key of the Calibration, Weight Scale record, and then displays, in a line graph, a summary of the primary output As Found, primary output As Left, and expected data for the specified record.</p> |

Queries Folder

The Catalog folder \\Public\Meridium\Modules\Calibration Management\Queries contains the following items.

| Item Name | Behavior and Usage |
|---|---|
| Analog Calibration Profile Linked Asset Query | Returns the list of assets that are linked to the Analog Calibration profile. |
| Applied Profiles Count | Returns the count of applied profiles that are linked to the Calibration profile. |

| Item Name | Behavior and Usage |
|---|---|
| Applied Template Asset Context | Returns the list of Profiles (by Profile ID) that contain linked assets. |
| Asset ID Configuration List Query | Returns the list of Calibration Asset ID Configuration details. |
| Beamex Receive Query | Returns the list of fields to be defined and transferred from the device when you receive data from a calibrator. |
| Beamex Send Query | Returns the list of Calibration Templates that you can send to a Beamex device. |
| Beamex Send Query Display | Returns the list of Calibration records from CMX. |
| CalibMapFamList | Returns the list of family details for the specified Mapping ID. |
| CalibMapFieldsList | Returns the list of field details for the specified Mapping ID. |
| CalibMapStratList | Returns the list of strategy details for the specified Mapping ID. |
| CalibProfTempList | Returns (by Template ID) the list of templates by input and output types. |
| Calibration Applied Template | Returns (by Family ID) the list of applied templates to a family. |
| Calibration Asset ID Query | Returns the list of asset IDs for the Equipment, Functional Location, and custom asset families from the Asset ID Configuration to display the values as an Asset ID in the applied template. |
| Calibration_Device_Result | Returns the list of fields to be displayed in the Calibration Results record. |
| Calibration Event Asset Context | Returns the list of Event details for a specified Asset. |
| Calibration Event Overview | Returns the list of Event details. |
| Calibration Library Template | Returns the list of Calibration Profile Template details. |
| Calibration Pass AF AL Count 5 Years | Returns the Pass AF and AL count for a specified asset. |
| Calibration Pass AF AL Trend 5 Years | Returns the Pass AF and AL trend for a specified asset. |
| Calibration Profile Linked Asset Query | Returns the list of equipment, functional location, or custom asset linked to a calibration profile. |
| Calibration Queue Overview | Returns (by Asset ID) the list of calibration queue records. |
| Calibration Queue Overview Filtered Base Query | Returns (by Calibration Task Due Date From, Calibration Task Due Date To, and Asset ID) the list of calibration queue records. |
| Calibration Queue Overview Filtered By Due Date | Returns (by Calibration Task Due Date From, Calibration Task Due Date To, and Asset ID) the list of calibration queue records. |
| Calibration Recommendation States | Returns the list of states of the Calibration Recommendations for the specified Entity Key. |
| Calibration Recommendations Query | Returns the list of states of the Calibration Recommendations. |
| Calibration Test Equipment | Returns the list of all the test equipment. |

| Item Name | Behavior and Usage |
|---|---|
| Calibration Tools Overview | Returns the list of all the test equipment and standard gas cylinders. |
| Calibration Totals Query | Returns (by Asset ID) the number of calibrations that have taken place for that asset, based on the number of closed Calibration Events that are linked to that Asset. |
| CalibrationDeviceDriverList | Returns the list of device drivers on the Calibration Admin Preferences page. |
| CalibrationMappingList | Returns the list of mappings on the Calibration Admin Preferences page for the specified device driver key. |
| CalibrationStrategyList | Returns the list of calibration strategies on the Calibration Admin Preferences page. |
| CalibTemDfltsList | Returns the list of template defaults on the Calibration Admin Preferences page for the specified device type. |
| Device Mapping Query | Returns the list of mappings between the Calibration fields defined in GE Digital APM and the calibrator fields. |
| DeviceList | Returns the list of calibration devices. |
| Fluke Receive Query | Returns the list of fields to be defined and transferred from the device when you receive data from a calibrator. |
| Fluke Send Query | Returns the list of Calibration Templates that you can send to a Fluke device. |
| Fluke Send Query Display | Returns the list of Calibration records for Fluke 74X. |
| GetFamilyFields | Returns the list of family fields for the specified family key. |
| GetLinkedCalibratorFields | Returns the list of calibrator fields that are mapped to a device for the specified mapping ID. |
| GetLinkedFamilies | Returns the list of calibrator families that are mapped to a device for the specified mapping key. |
| GetLinkedFields | Returns the list of calibrator fields that are mapped to a device for the specified family key and mapping key. |
| GetLinkedStrategies | Returns the list of strategies that are mapped to a device for the specified mapping key. |
| Get Unrelated Families | Returns the list of families not related to a device mapping for a specified mapping ID. |
| Instrument Data Query | Returns the Asset_Key prompt for the Entity Key of an Asset record, and then displays data stored in the specified record. This query is used to populate the fields related to an Asset when you apply a Calibration Template to an Asset. |
| Instrumentation System Overview Query | Returns the list of Instrumentation System records. |
| Instrumentation System Calibration Task Query | Returns the list of calibration tasks linked to the Instrumentation System's parent asset. |

| Item Name | Behavior and Usage |
|---|--|
| Instrumentation System Child Asset List Query | Returns the list of child assets linked to the Instrumentation System. |
| Instrumentation System Task Scope Detail Query | Returns the calibration task scope details for the selected calibration task. |
| Instrumentation System Summary Event Query | Returns the list of summary events for the Instrumentation System. |
| Instrumentation System Summary Child Event Query | Returns the list of summary child events for the Instrumentation System. |
| Instrumentation System Child Asset Event Query | Returns the list of all calibration events for the selected asset. |
| Manage Calibration Task Query | Returns the list of calibration tasks for the specified template key. |
| Manage Calibration Task With Task Assigned Query | Returns the list of calibration records that contain tasks for the specified template key. |
| Manage Calibration Task Without Task Assigned Query | Returns the list of calibration records that do not contain tasks for the specified template key. |
| Query For AnalogCalibrationGraphs | Supports the Analog Calibration Error Graph and the Analog Calibration Measure Graph, which are stored in the Graphs folder. |
| Query For AnalogCalibrationReport | Supports the Analog Calibration Report, which is stored in the Reports folder. |
| Query For AnalogCalibrationTemplateReport | Supports the Analog Calibration Template Report, which is stored in the Reports folder. |
| Query For AnalyzerMultiComponentCalibrationGraphs | Supports the Analyzer Multi-Component Calibration Error Graph, which is stored in the Graphs folder. |
| Query For AnalyzerMultiComponentCalibrationReport | Supports the Analyzer MultiComponent Calibration Report, which is stored in the Reports folder. |
| Query For AnalyzerMultiComponentCalibrationTemplateReport | Supports the Analyzer MultiComponent Calibration Template Report, which is stored in the Reports folder. |
| Query For AnalyzerMultiComponentCalibrationTemplateSubReport | Supports the Analyzer MultiComponent Calibration Template Sub Report, which is stored in the Reports folder. |
| Query For AnalyzerSingleComponentCalibrationGraphs | Supports the Analyzer SingleComponent Calibration Error Graph and the Analyzer SingleComponent Calibration Measure Graph, which are stored in the Graphs folder. |
| Query For AnalyzerSingleComponentCalibrationReport | Supports the Analyzer SingleComponent Calibration Report, which is stored in the Reports folder. |
| Query For AnalyzerSingleComponentCalibrationTemplateReport | Supports the Analyzer SingleComponent Calibration Template Report, which is stored in the Reports folder. |
| Query For AnalyzerSingleComponentCalibrationTemplateSubReport | Supports the Analyzer SingleComponent Calibration Template Sub Report, which is stored in the Reports folder. |

| Item Name | Behavior and Usage |
|---|---|
| Query For CalibrationErrorTrendGraphs | Supports the Calibration Error Trend Graph, which is stored in the Graphs folder. |
| Query For CalibrationPassFailTrendGraphs | Supports the Calibration Pass Fail Trend Graph, which is stored in the Graphs folder. |
| Query For CMXCalibrationReport | Returns the Calibration, CMX event record for the specified Event Key. |
| Query For CMXCalibrationTemplateReport | Returns the Calibration Template, CMX record for the specified Template Key. |
| Query For DiscreteCalibrationReport | Supports the Discrete Calibration Report, which is stored in the Reports folder. |
| Query For DiscreteCalibrationTemplateReport | Supports the Calibration Template, Discrete Report, which is stored in the Reports folder. |
| Query For FunctionalTestCalibrationFieldReport | Supports the Functional Test Calibration Field Report, which is stored in the Reports folder. |
| Query For FunctionalTestCalibrationReport | Support the Functional Test Calibration Report, which is stored in the Reports folder. |
| Query For WeightScaleCalibrationGraphs | Supports the WeightScale Calibration Error Graph and the WeightScale Calibration Measure Graph, which are stored in the Graphs folder. |
| Query For WeightScaleCalibrationReport | Supports the WeightScale Calibration Report, which is stored in the Reports folder. |
| Query For WeightScaleCalibrationTemplateReport | Supports the WeightScale Calibration Template Report, which is stored in the Reports folder. |
| Query For WeightScaleCalibrationTemplateSubReport | Supports the WeightScale Calibration Template SubReport, which is stored in the Reports folder. |
| RetrievFieldData | Returns the list of field data for a calibration mapping field for a specified Field ID and Family ID. |
| Standard Gas Cylinder Overview | Returns the list of all the standard gas cylinders. |
| Task Query | Displays the Asset_Key prompt for the Entity Key for the Asset record, and then returns the Calibration Tasks records for the specified record. |
| Template Defaults | Returns the list of template defaults. |

Reports Folder

The Catalog folder `\\Public\Meridium\Modules\Calibration Management\SSRS` contains the following items.

| Report Name | Behavior and Usage |
|--|---|
| Analog Calibration Report | Displays the EventKey prompt for the Entity Key of the Calibration, Analog record and then displays the generated Analog Calibration Report details for the specified Calibration Event. |
| Analog Calibration Template Report | Displays the key prompt for the Entity Key of the Calibration Template, Analog record and then displays the generated Analog Calibration Template Report details for the specified Calibration Template. |
| Analyzer MultiComponent Calibration Report | Displays the EventKey prompt for the Entity Key of the Calibration, Multi-Component Analyzer record and then displays the generated Analyzer MultiComponent Calibration Report details for the specified Calibration Event. |
| Analyzer MultiComponent Calibration Template Report | Displays the key prompt for the Entity Key of the Calibration Template, Multi-Component Analyzer record and then displays the generated Analyzer MultiComponent Calibration Template Report details for the specified Calibration Template. |
| Analyzer MultiComponent Calibration Template Sub Report | Displays the key prompt for the Entity Key of the Calibration Template, Multi-Component Analyzer record and then displays the generated Analyzer MultiComponent Calibration Template Sub Report details for the specified Calibration Template. |
| Analyzer SingleComponent Calibration Report | Displays the EventKey prompt for the Entity Key of the Calibration, Single Component Analyzer record and then displays the generated Analyzer SingleComponent Calibration Report details for the specified Calibration Event. |
| Analyzer SingleComponent Calibration Template Report | Displays the key prompt for the Entity Key of the Calibration Template, Single Component Analyzer record and then displays the generated Analyzer SingleComponent Calibration Template Report details for the specified Calibration Template. |
| Analyzer SingleComponent Calibration Template Sub Report | Displays the key prompt for the Entity Key of the Calibration Template, Single Component Analyzer record and then displays the generated Analyzer SingleComponent Calibration Template Sub Report details for the specified Calibration Template. |
| CMX Calibration Report | Displays the EventKey prompt for the Entity Key of the Calibration, CMX record and then displays the generated CMX Calibration Report details for the specified Calibration Event. |
| CMX Calibration Template Report | Displays the key prompt for the Entity Key of the Calibration Template, CMX record and then displays the generated CMX Calibration Template Report details for the specified Calibration Template. |
| Discrete Calibration Report | Displays the EventKey prompt for the Entity Key of the Calibration, Discrete record and then displays the generated Discrete Calibration Report details for the specified Calibration Event. |
| Discrete Calibration Template Report | Displays the key prompt for the Entity Key of the Calibration Template, Discrete record and then displays the generated Discrete Calibration Template Report details for the specified Calibration Template. |
| WeightScale Calibration Report | Displays the EventKey prompt for the Entity Key of the Calibration Weight Scale Setup record and then displays the generated WeightScale Calibration Report details for the specified Calibration Event. |

| Report Name | Behavior and Usage |
|--|--|
| WeightScale Calibration Template Report | Displays the key prompt for the Entity Key of the Calibration Template, Weight Scale record and then displays the generated WeightScale Calibration Template Report details for the specified Calibration Template. |
| WeightScale Calibration Template SubReport | Displays the key prompt for the Entity Key of the Calibration Template, Weight Scale record and then displays the generated WeightScale Calibration Template SubReport details for the specified Calibration Template. |

The Catalog folder \\Public\Meridium\Modules\Calibration Management\Reports contains the following items.

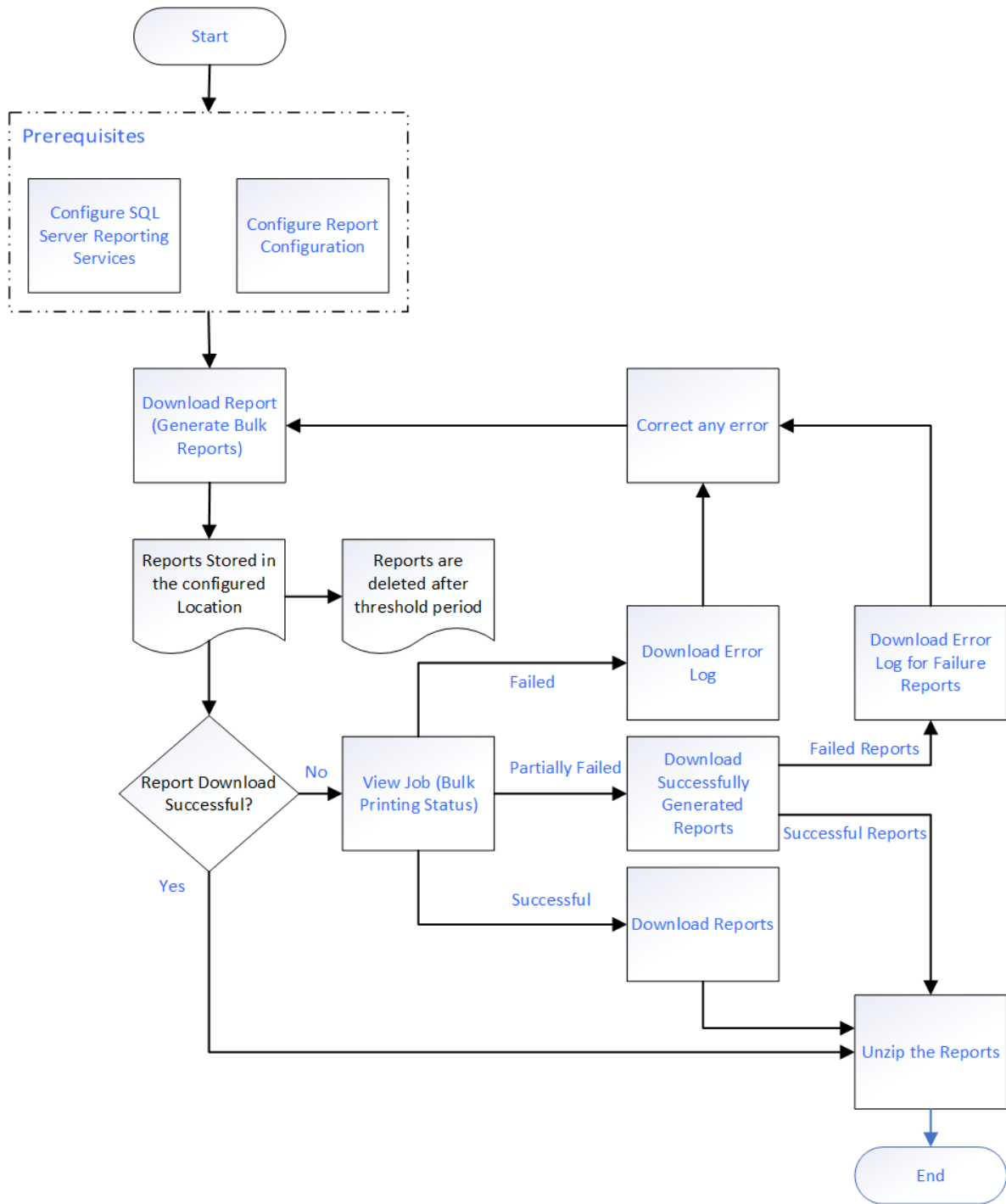
| Report Name | Behavior and Usage |
|---|--|
| Functional Test Calibration Report | Displays the EventKey prompt for the Entity Key of the Calibration, Functional Test record and then displays the generated Functional Test Calibration Report details for the specified Calibration Event. |
| Functional Test Calibration Template Report | Displays the key prompt for the Entity Key of the Calibration Template, Functional Test record and then displays the generated Functional Test Calibration Template Report details for the specified Calibration Template. |

Calibration Reports

Bulk Printing of Calibration Reports

Using the bulk print functionality, you can generate multiple reports at a time. The generated reports are stored in a location configured in SQL Server Reporting Services (SSRS). After you successfully generate the reports, you can download the reports as a .zip file.

The bulk printing process consists of the following steps:



Note:

- If you have a pop-up blocker enabled on your browser, disable it to download the report.
- The reports can be either Calibration Template reports or Calibration Event reports.

Download Bulk Calibration Reports

Before You Begin


- Access the Report Configuration page and complete the configurations to store the generated reports.
- Make sure that a default report is configured in the Family Reports section of the Calibration Template and Calibration Event families.

About This Task

You can download the reports for the print jobs that are successfully completed or partially failed.

Procedure

1. Access the **Calibration Management Overview** page.
2. Select **Calibration Queue** to print Calibration Template reports or select **Calibration Events** to print Calibration event reports.
3. Select the records to print reports.
A maximum of 100 records is suggested.

4. To download the report, select 
The **Download** window appears, displaying the following options to download the report:

- **Combined Report:** downloads all the Calibration reports as one single PDF file.

Note: This option is selected by default.

- **Individual Reports:** downloads each Calibration report as a single PDF file.

5. Select the **Combined Report** option.
6. Enter the **File Name** for the downloaded file.
7. Select **Download**.
The download starts and you can see the progress of the Download Reports job in the **View Log** section. After the Download Reports job is complete, the browser will download the file.
8. Extract the .zip file.

For Individual Reports,

The report of each Calibration record appears as a single PDF file. The file name of the report is set to Template ID for the Calibration Template reports, and a combination of Event ID and Template ID for the Calibration Event reports.

For Combined Report,

The consolidated Report of all the Calibration records appears as a single PDF file. The file name of the report is the name specified when downloading the combined report.

Next Steps

- [View Download Status.](#)
- [Download Generated Calibration Reports.](#)

View Download Status

Procedure

1. Access the **Calibration Management Overview** page.

2. Select **View Log**.
The **Downloads** page appears displaying the status of the print jobs that you have generated. The following are the different sections for each state of the report generated.
 - **In progress:** Displays all the jobs that are currently in progress.
 - **Successful:** Displays all the jobs that are successfully completed. You can download the **Report** and the **Log** for the corresponding job.
 - **Failed:** Displays all the jobs that failed. You can download the error log and the Calibration Reports that are successfully generated.

Note: The print job fails if any of the selected Calibration Report generation fails.

Next Steps

[Download Generated Calibration Reports.](#)


Download Generated Calibration Reports

About This Task

You can download the reports from the successfully completed print jobs.

Procedure

1. Access the **Calibration Management Overview** page.
2. Select **View Log**.
The **Downloads** page appears displaying the status of the print jobs that you have generated. The following are the different sections for each state of the report generated.
 - **In progress:** Displays all the jobs that are currently in progress.
 - **Successful:** Displays all the jobs that are successfully completed. You can download the **Report** and the **Log** for the corresponding job.
 - **Failed:** Displays all the jobs that failed. You can download the error log and the Calibration Reports that are successfully generated.

Note: The print job fails if any of the selected Calibration Report generation fails.
3. Select **Successful**.
The print jobs that are successfully completed are displayed as a table.
4. In the Report column of the print job you wanted to download, select .
The report associated with the print job is downloaded as a .zip file.
5. Extract the .zip file.

For Individual Reports,

The report of each Calibration record appears as a single PDF file. The file name of the report is set to Template ID for the Calibration Template reports, and a combination of Event ID and Template ID for the Calibration Event reports.

For Combined Report,

The consolidated report of all the Calibration records appears as a single PDF file. The file name of the report is the name specified when downloading the combined report.