



GE VERNOVA

**Asset Performance Management**

**On-Premises APM**

**V5.2.2.0.0**

**Calibration Management**

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# Chapter 1

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## 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](#).

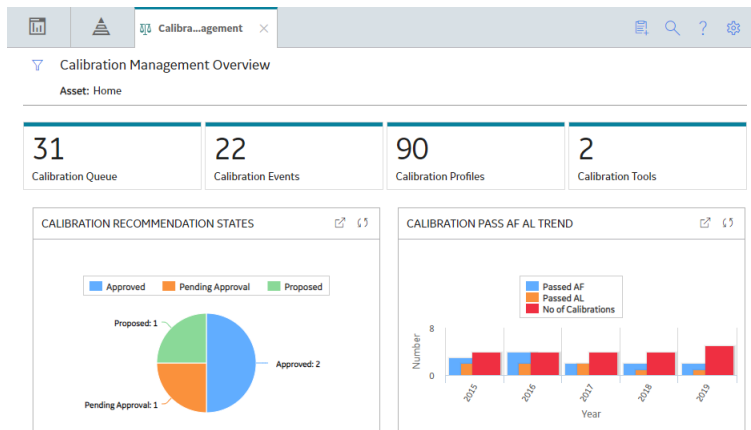
### Procedure


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 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.
- 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](#). 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 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 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

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## Workflows

### Topics:

- Calibration Planning
- Instrumentation System  
Planning Workflow
- Calibration Administration
- Calibration Assessment
- Calibration Assessment  
CMX

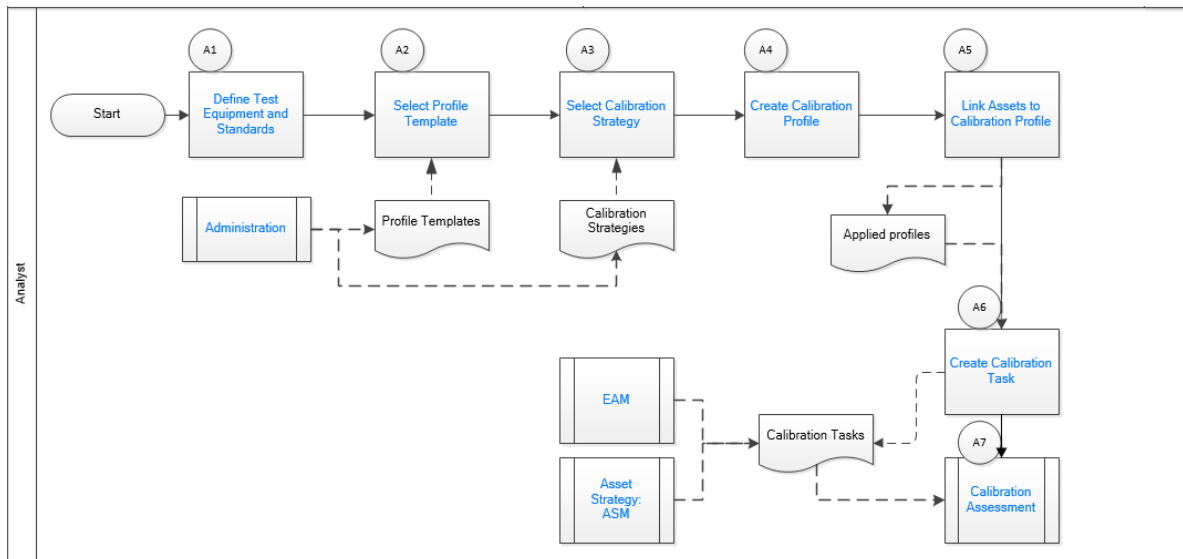
# Calibration Planning

## 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 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, 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

APM Asset Strategy Management (ASM) software module. The ASM module is available in 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 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

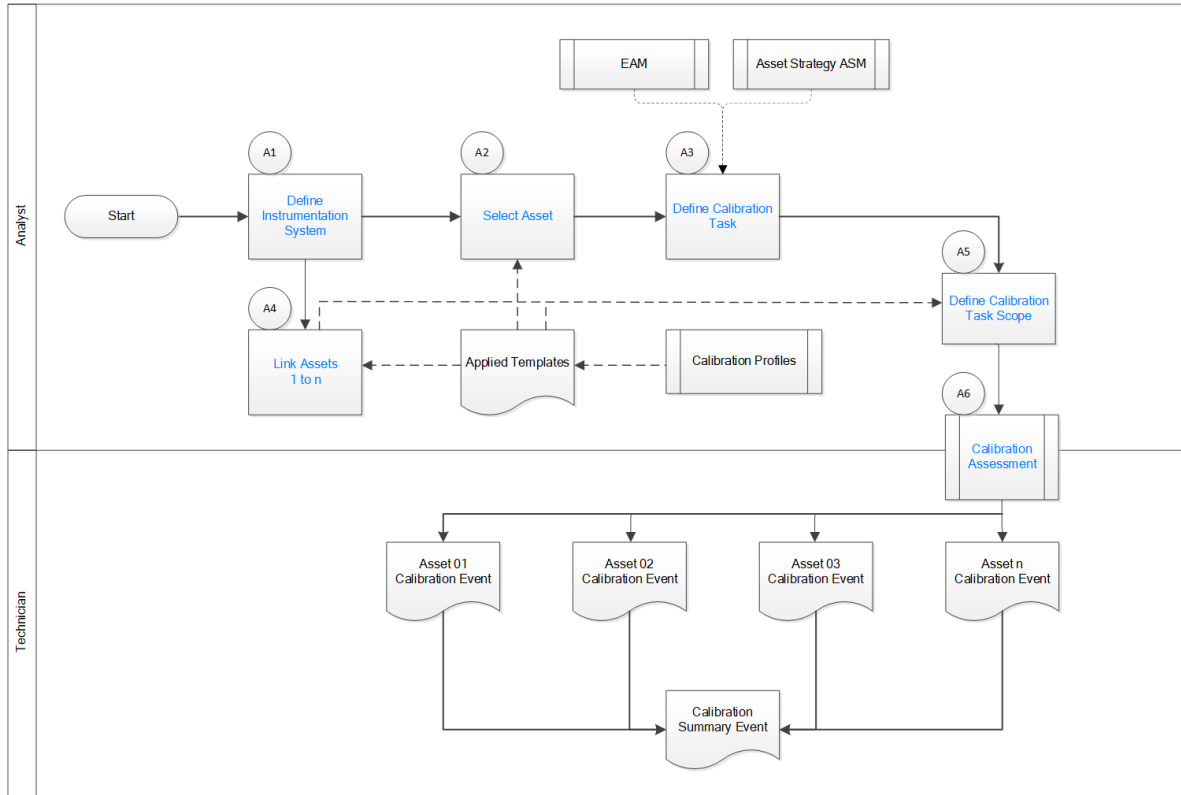
### Calibration Management: Instrumentation System Planning Workflow

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 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

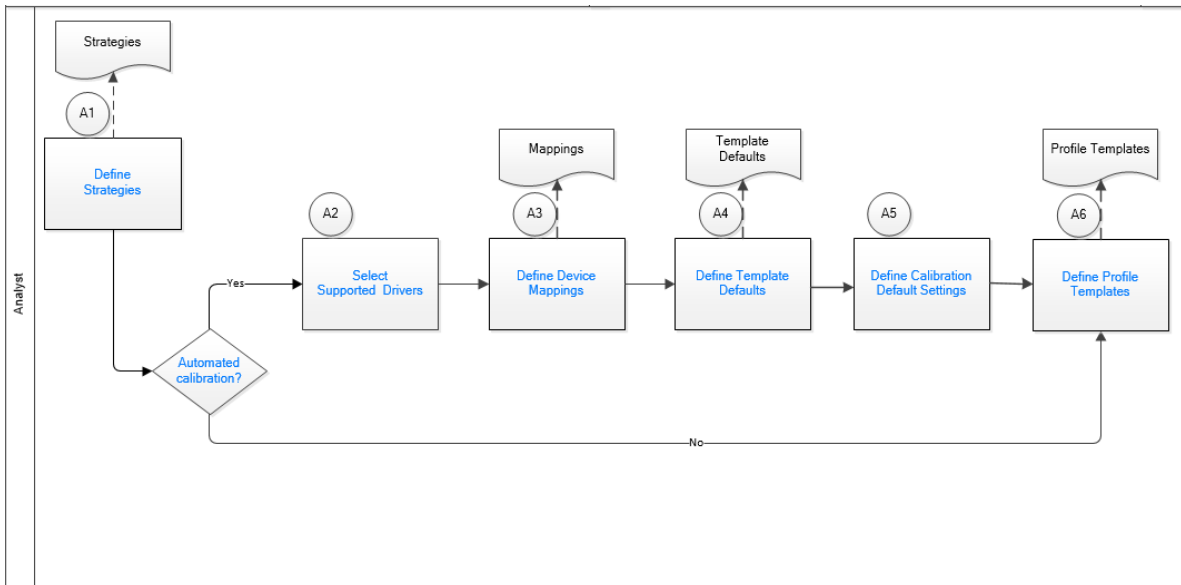
### Calibration Management: Calibration Administration

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 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 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 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.

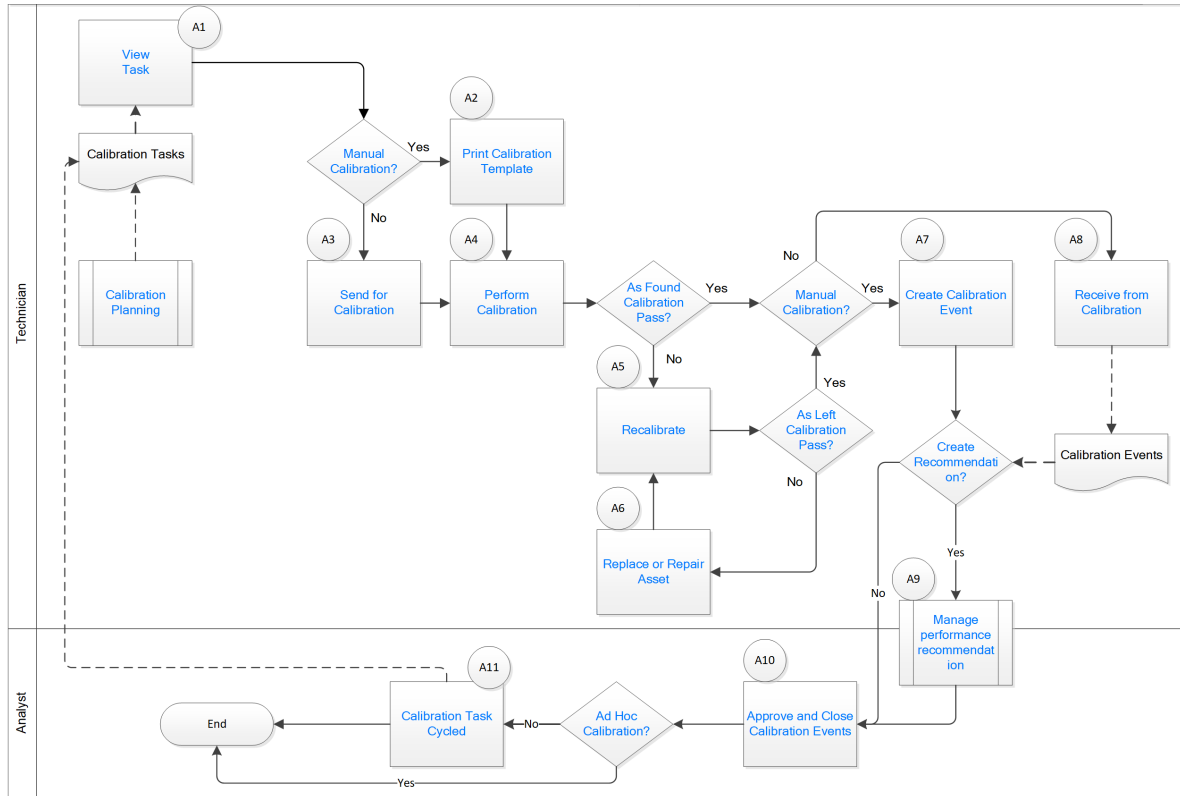
## Calibration Assessment

### 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 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 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 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.

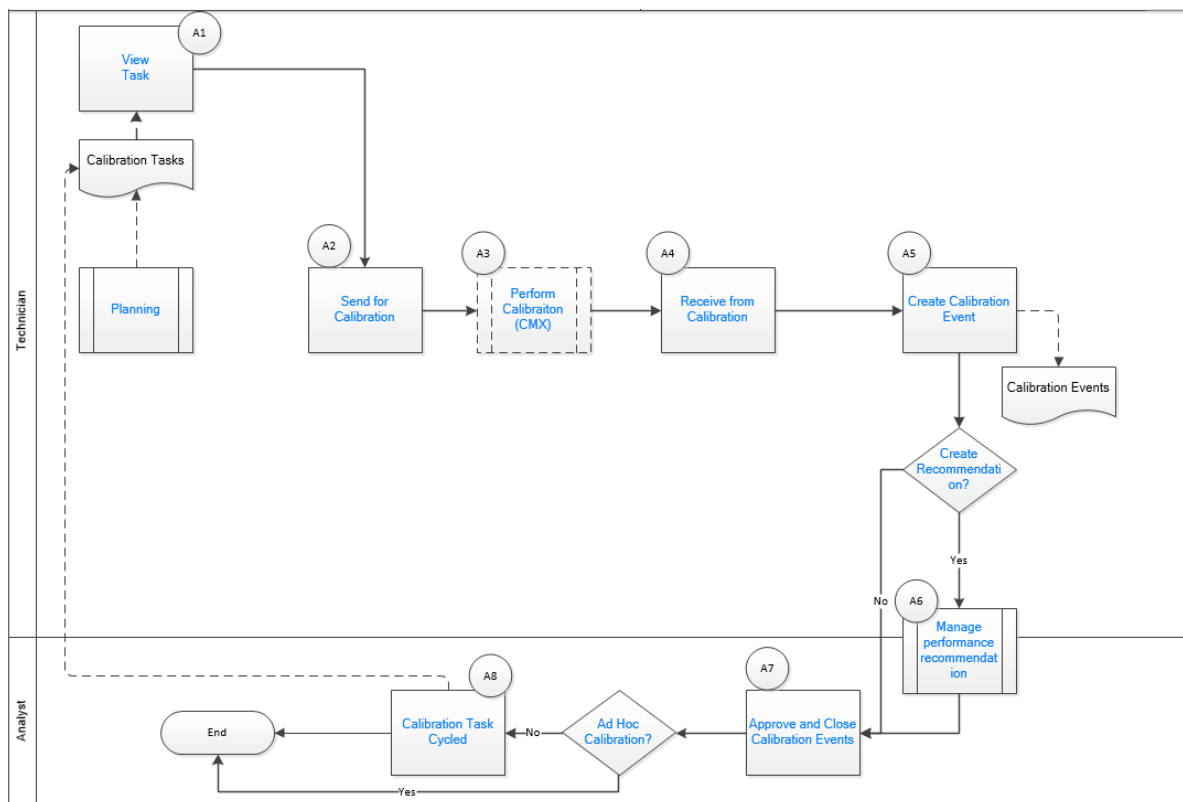
# Calibration Assessment CMX

## 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 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 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

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## 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 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 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 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 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 APM system supports two different types of reference documents:

- **Internal Reference Documents:** Reference document files that are stored in the APM database.
- **External Reference Documents:** Reference document files and websites that reside outside of the 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 .
4. Next to each Test Equipment History, a check box appears.
5. Next to each Test Equipment History that you want to delete, select the check box.
6. 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.
7. 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

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## 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 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 89

## 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

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## 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:

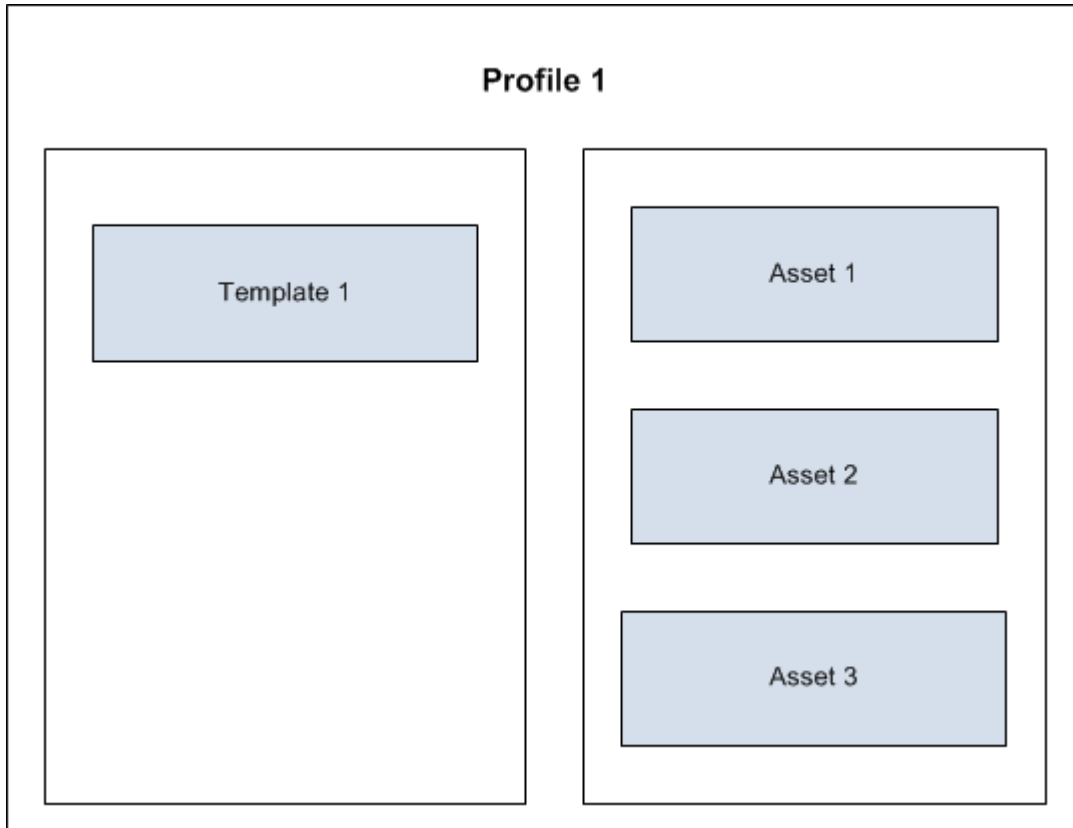
- **Calibration Template, Analog:** Records calibration strategy details of a device that measures an input value and displays the output as an analog signal. Example: speedometer, pressure gauge, thermometer.
- **Calibration Template, Discrete:** Records calibration strategy details of a device that 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.

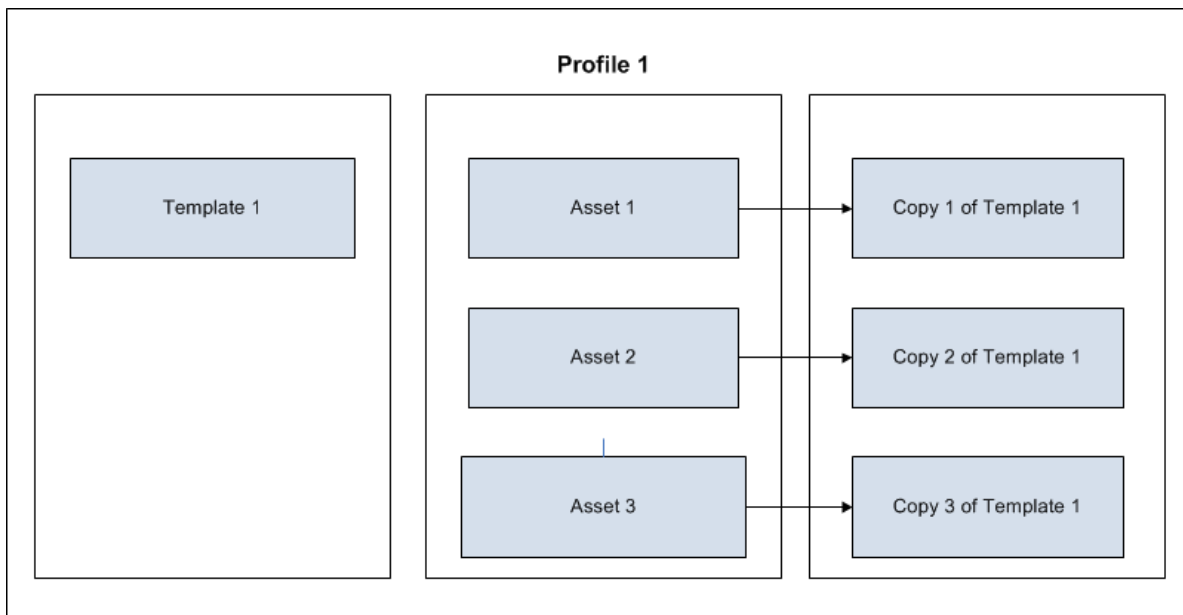
## Calibration Profiles

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. 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.

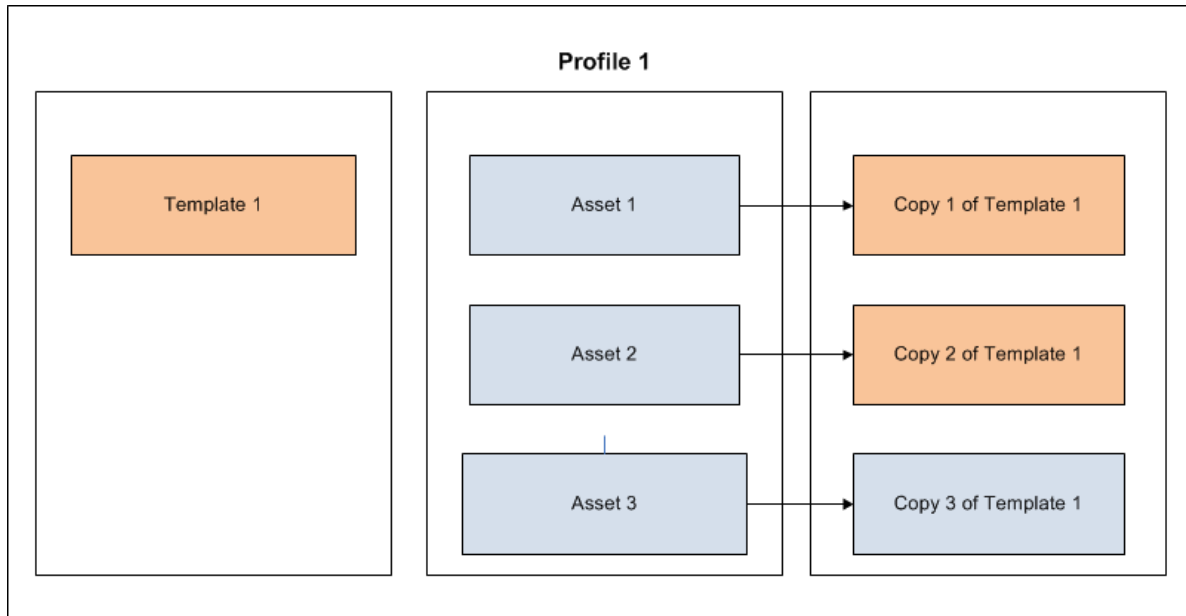


APM creates three copies of the Profile Template, Template 1, and links them to Asset 1, Asset 2, and Asset 3.



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

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

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1 of 1 100% Find | Next

## 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
<b>Primary Input Range:</b>	0	2	bar
<b>Primary Output Range:</b>	4	20	mA
<b>Custom Input Range:</b>			
<b>Custom Output Range:</b>			

**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 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

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## 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 Systems.
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

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## Calibration Tasks

### Topics:

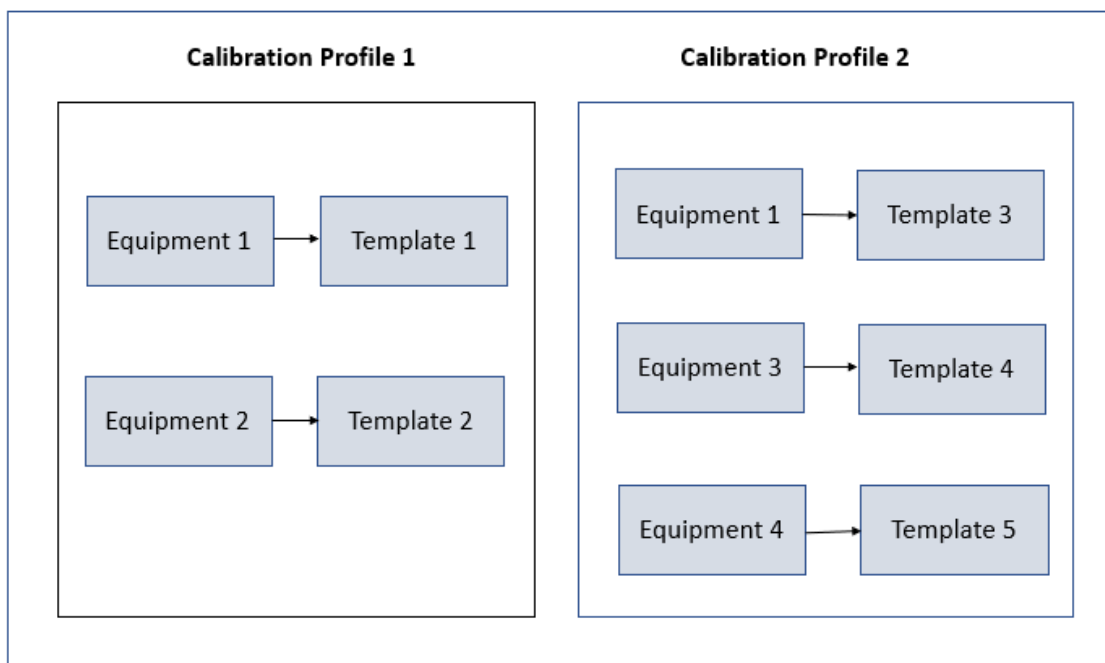
- [About Calibration Task](#)
- [Access a Calibration Task](#)
- [Link a Calibration Task to a Profile](#)
- [Filter Calibration Tasks](#)
- [Perform Manual Calibration](#)
- [Unlink a Calibration Task from a Profile](#)
- [Delete a Calibration Task](#)

## 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.

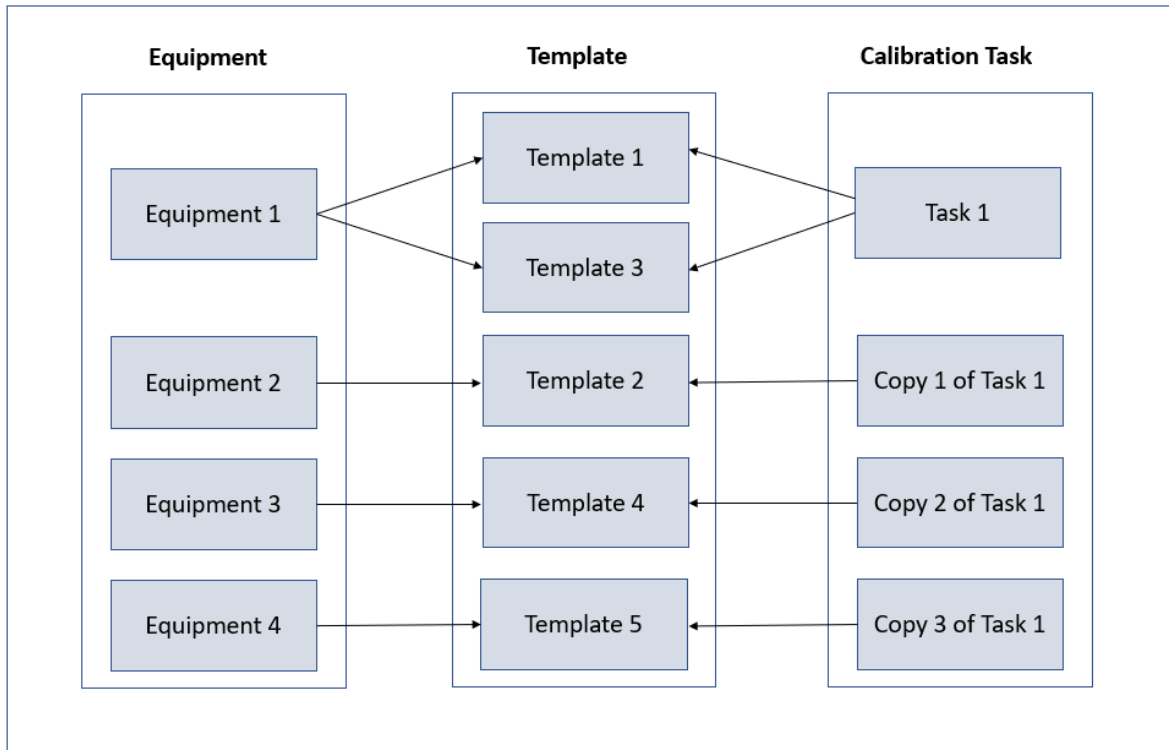
Calibration Tasks are linked to Calibration Profiles. After you link a Calibration Task to one or more profiles, APM creates a copy of the task for each Profile and Asset combination.

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. 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, 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 select the date range option to filter the tasks.

**Note:** The list of date range options is based on the settings in the **Calibration Admin Preferences** page. For more information, refer to [Set the Default Date Range for Calibration Queue](#) on page 80.

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.

These applied date range filters are saved for the logged in user, so that when same user logged in again or reload the page, the saved filters are applied automatically.

If the saved filter option is removed from the list in Admin settings, the default filter option from Admin settings will be applied automatically to filter tasks.

### 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 improve 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

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## 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 APM. After the data is imported, 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 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 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"> <li>• CMX Calibration Management Software is a third-party software that supports different calibration types as per the specifications.</li> <li>• APM maintains a replica of the templates that CMX Calibration Management Software supports. You can modify the templates manually if there are any changes.</li> <li>• No field mapping configuration is provided between APM and CMX Calibration Management Software.</li> </ul>
Fluke 744 / Fluke 754 Documenting Process Calibrator	<ul style="list-style-type: none"> <li>• 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.</li> <li>• Pressure, Temperature, Voltage, Current, Frequency, and Resistance are supported as Input and Output Modes.</li> </ul>
Fluke 729 Automatic Pressure Calibrator	<ul style="list-style-type: none"> <li>• 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.</li> <li>• Pressure, Current, and Voltage are supported as Input and Output Modes.</li> <li>• Existing catalog queries that are bound to Fluke 74x are also applicable to Fluke 729.</li> </ul>
GE Druck Calibrator	<ul style="list-style-type: none"> <li>• 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.</li> <li>• It does not support square root function.</li> <li>• Pressure, Temperature, Voltage, Current, Frequency, and Resistance are supported as Input and Output Modes.</li> </ul>

# 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:** 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 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 GE Device Service, then a message appears, asking you to install it. You must install the GE 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 GE 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 APM verifies if the GE Device Service has been installed.

- If you have not installed the GE Device Service, then a message appears, asking you to install it. You must install the GE 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 APM and the calibrator is tested.

- If you did not install the GE Device Service, then a message appears, asking you to install it. You must install the GE 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 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 GE 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 GE Device Service utility is also modified to support the device. Therefore, if you have recently upgraded the APM from an earlier version, you must uninstall the previous version of the GE 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 63.

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 GE Device Service is installed.

**Note:** If the GE Device Service is not installed or not running, an error message appears, indicating that the GE 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 GE Device Service. When you first try to send data to or receive data from the calibrator, if you have not installed the GE 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, 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 APM. If there is any record that was sent to Calibrator and was modified or deleted in 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 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 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 1386 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 1419 604" style="list-style-type: none"> <li data-bbox="451 415 1386 506">• 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> <li data-bbox="451 514 1419 604">• 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.</li> </ul> <p data-bbox="451 621 1424 678"><b>Solution:</b> 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="451 705 1312 735">Test point percentage values must be between 0 to 100.</p> <p data-bbox="451 756 1195 785">This is an error and the template will not be downloaded to the Calibrator.</p> <p data-bbox="451 804 1409 833">Test Point Percentage of one or more template detail records are outside the range of 0 to 100.</p> <p data-bbox="451 850 1401 907"><b>Solution:</b> Verify all template detail records and make sure the test point percentage values are between 0 to 100.</p>
CMW00003	<p data-bbox="451 932 1295 999">Primary Input or Output values are out of range. The selected device may not support this range of values.</p> <p data-bbox="451 1020 1409 1144">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 1161 1365 1218"><b>Solution:</b> 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 1245 1365 1348">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 1369 1409 1428">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 1444 1424 1539" style="list-style-type: none"> <li data-bbox="451 1444 1312 1474">• The Send Mapping record set in the template may have been deleted or modified.</li> <li data-bbox="451 1482 1424 1539">• The Receive Mapping does not exist or is not linked to the corresponding Send Mapping that is defined in the template.</li> </ul> <p data-bbox="451 1556 1414 1612"><b>Solution:</b> 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="451 254 1382 321">Length of Tag Id value is greater than 30 characters which will be trimmed</p> <p data-bbox="451 359 1403 384">This is a warning and the template will get downloaded. The following are the possible causes:</p> <ul data-bbox="451 401 1398 554" style="list-style-type: none"> <li data-bbox="451 401 1317 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> <li data-bbox="451 464 1398 554">• 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.</li> </ul> <p data-bbox="451 575 1390 663"><b>Solution:</b> 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="451 688 1362 756">Length of Tag Serial number is greater than 32 characters which will be trimmed.</p> <p data-bbox="451 779 1403 804">This is a warning and the template will get downloaded. The following are the possible causes:</p> <ul data-bbox="451 821 1409 974" style="list-style-type: none"> <li data-bbox="451 821 1398 877">• 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> <li data-bbox="451 884 1409 974">• 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.</li> </ul> <p data-bbox="451 995 1422 1083"><b>Solution:</b> 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="451 254 1365 323">The send mapping record is missing the following required field mappings</p> <p data-bbox="451 359 1341 420">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="451 436 889 464">Required field mapping for Analog template</p> <table border="1" data-bbox="451 501 1414 1157"> <thead> <tr> <th data-bbox="456 506 932 554">APM Field</th> <th data-bbox="932 506 1409 554">Calibrator Field</th> </tr> </thead> <tbody> <tr> <td data-bbox="456 554 932 602">Calibration Strategy</td> <td data-bbox="932 554 1409 602">STRATEGY</td> </tr> <tr> <td data-bbox="456 602 932 651">Calibration Template Key</td> <td data-bbox="932 602 1409 651">UNIQUE_TASK_ID</td> </tr> <tr> <td data-bbox="456 651 932 699">Input Mode</td> <td data-bbox="932 651 1409 699">SOURCE_MODE</td> </tr> <tr> <td data-bbox="456 699 932 747">Max Error Limit</td> <td data-bbox="932 699 1409 747">ERROR_TOLERANCE</td> </tr> <tr> <td data-bbox="456 747 932 795">Output Mode</td> <td data-bbox="932 747 1409 795">MEASURE_MODE</td> </tr> <tr> <td data-bbox="456 795 932 844">Percent of Scale Test Point</td> <td data-bbox="932 795 1409 844">SCALE_PERCENT</td> </tr> <tr> <td data-bbox="456 844 932 892">Primary Input LRV</td> <td data-bbox="932 844 1409 892">SOURCE_ZERO</td> </tr> <tr> <td data-bbox="456 892 932 940">Primary Input URV</td> <td data-bbox="932 892 1409 940">SOURCE_FULL_SCALE</td> </tr> <tr> <td data-bbox="456 940 932 989">Primary Input Range Units</td> <td data-bbox="932 940 1409 989">SOURCE_UOM</td> </tr> <tr> <td data-bbox="456 989 932 1037">Primary Output LRV</td> <td data-bbox="932 989 1409 1037">MEASURE_ZERO</td> </tr> <tr> <td data-bbox="456 1037 932 1085">Primary Output URV</td> <td data-bbox="932 1037 1409 1085">MEASURE_FULL_SCALE</td> </tr> <tr> <td data-bbox="456 1085 932 1134">Primary Output Units</td> <td data-bbox="932 1085 1409 1134">MEASURE_UOM</td> </tr> </tbody> </table> <p data-bbox="451 1173 899 1201">Require Field Mapping for Discrete Template</p> <table border="1" data-bbox="451 1239 1414 1745"> <thead> <tr> <th data-bbox="456 1243 932 1291">APM Field</th> <th data-bbox="932 1243 1409 1291">Calibrator Field</th> </tr> </thead> <tbody> <tr> <td data-bbox="456 1291 932 1339">Calibration Strategy</td> <td data-bbox="932 1291 1409 1339">STRATEGY</td> </tr> <tr> <td data-bbox="456 1339 932 1388">Calibration Template Key</td> <td data-bbox="932 1339 1409 1388">UNIQUE_TASK_ID</td> </tr> <tr> <td data-bbox="456 1388 932 1436">Input Mode</td> <td data-bbox="932 1388 1409 1436">SOURCE_MODE</td> </tr> <tr> <td data-bbox="456 1436 932 1484">Engineering Units Error Limit</td> <td data-bbox="932 1436 1409 1484">SWT_TOLERANCE</td> </tr> <tr> <td data-bbox="456 1484 932 1533">Output Mode</td> <td data-bbox="932 1484 1409 1533">MEASURE_MODE</td> </tr> <tr> <td data-bbox="456 1533 932 1581">Percent of Scale Test Point</td> <td data-bbox="932 1533 1409 1581">SCALE_PERCENT</td> </tr> <tr> <td data-bbox="456 1581 932 1629">Primary Input LRV</td> <td data-bbox="932 1581 1409 1629">SOURCE_ZERO</td> </tr> <tr> <td data-bbox="456 1629 932 1677">Primary Input URV</td> <td data-bbox="932 1629 1409 1677">SOURCE_FULL_SCALE</td> </tr> <tr> <td data-bbox="456 1677 932 1726">Primary Input Range Units</td> <td data-bbox="932 1677 1409 1726">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
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Error Code	Description												
	<p data-bbox="451 258 982 285">Required Field Mapping for Functional Test Template</p> <table border="1" data-bbox="451 325 1414 627"> <thead> <tr> <th data-bbox="451 325 932 373">APM Field</th> <th data-bbox="932 325 1414 373">Calibrator Field</th> </tr> </thead> <tbody> <tr> <td data-bbox="451 373 932 426">Calibration Strategy</td> <td data-bbox="932 373 1414 426">STRATEGY</td> </tr> <tr> <td data-bbox="451 426 932 478">Calibration Template Key</td> <td data-bbox="932 426 1414 478">UNIQUE_TASK_ID</td> </tr> <tr> <td data-bbox="451 478 932 531">Instruction</td> <td data-bbox="932 478 1414 531">FUNC_INSTRUCT</td> </tr> <tr> <td data-bbox="451 531 932 583">Response Type</td> <td data-bbox="932 531 1414 583">FUNC_RESPONSE_TYPE</td> </tr> <tr> <td data-bbox="451 583 932 627">Sequence Number</td> <td data-bbox="932 583 1414 627">FUNC_STEP</td> </tr> </tbody> </table> <p data-bbox="451 646 1382 705"><b>Solution:</b> 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

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## 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 an 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 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 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 70.

### 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 70.


### 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 topics 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.](#)

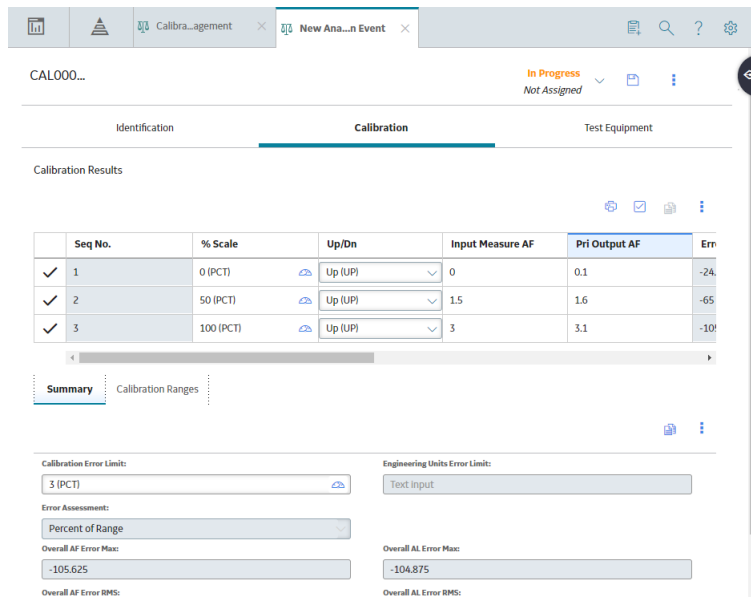
**Tip:** You can also [access the Calibration Management Overview page](#) for a hierarchy level.

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 displays the Calibration Management Overview page for a specific calibration event. The page is divided into three main sections: Identification, Calibration, and Test Equipment. The Calibration section is currently active, showing a table of Calibration Results. Below the table, there is a Summary section with various error limits and assessment metrics.

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	-10

**Summary**

Calibration Error Limits: 3 (PCT)

Engineering Units Error Limit: Text input

Error Assessment:

Percent of Range

Overall AF Error Max: -105.625

Overall AL Error Max: -104.875

Overall AF Error RMS:

Overall AL Error RMS:

## 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.

Begin

Manage State  
Assignments

Done

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.
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:** 2U **Allowable Error:** 3 Percent

	LR Value	UR Value	Range UOM
<b>Primary Input Range:</b>	0	2	bar
<b>Primary Output Range:</b>	4	20	mA
<b>Custom Input Range:</b>			
<b>Custom Output Range:</b>			

## 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

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. 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

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## Admin

### Topics:

- [Calibration Management Admin Preferences](#)
- [Overview Configuration](#)
- [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 **Overview Configuration** workspace, which contains a list of queries used to populate the **Calibration Management Overview** page, along with the **Task Next Date Filter Options** section, which contains the date range settings to filter the records in the **Calibration Queue** section in the **Calibration Management Overview** page.

The screenshot shows the 'Calibration Admin Preferences' page with the 'Overview Configuration' tab selected. The page has a sidebar on the left with navigation options: Overview Configuration, Automated Calibration Settings, Strategies, Mappings, Manual Templates, Default Configurations, and Asset ID Configuration. The main content area is titled 'Overview Configuration' and includes a 'Save' button in the top right. Below the title is a 'Manage Queries:' section with four rows, each representing a different query type: Queue Query, Event Query, Profile Query, and Tools Query. Each row shows a query path and a three-dot menu icon. Below this is the 'Task Next Date Filter Options' section, which includes a descriptive text and a table with columns for 'Option', 'Default', and 'Display'. The 'Custom' option is selected as the default. The 'Custom' row also includes input fields for 'Months Prior to Current Date' and 'Months After Current Date', both set to '6'.

Option	Default	Display
30 Days	<input type="radio"/>	<input checked="" type="checkbox"/>
60 Days	<input type="radio"/>	<input checked="" type="checkbox"/>
90 Days	<input type="radio"/>	<input checked="" type="checkbox"/>
Overdue	<input type="radio"/>	<input checked="" type="checkbox"/>
Custom	<input checked="" type="radio"/>	<input checked="" type="checkbox"/>

Months Prior to Current Date	6
Months After Current Date	6

## Overview Configuration

### About Managing Queries

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

### 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 **Overview Configuration** workspace, next to the query that you want to replace, select  .  
The **Select APM 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 **Overview Configuration** 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 range for the filter in the **Calibration Queue** section.

In the **Task Next Date Filter Options** section, you can modify the date filters that appear in the **Calibration Queue** section in the **Calibration Management Overview** page.

### Procedure

1. [Access the Calibration Admin Preferences page.](#)
2. In the **Task Next Date Filter Options** section in the **Overview Configuration** section, set the date filters as follows:
  - In the **Default** column, select the date range that you want to use by default. When you set this filter, the corresponding tasks appear in the **Calibration Queue** section.
  - In the **Display** column, select the check boxes for the date ranges that you want to display in the **Calibration Queue** section. If you select the **Custom** check box, specify the number of months prior to and after the current date to set the date range filter.

3. 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 filter](#) in the **Calibration Queue** section.

## 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 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 GE Device Service utility picks up the work orders from this folder and transfers them to APM. In 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 GE 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. 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 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 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 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 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.
- 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.
  - Select the **Profile Templates** tab.  
The **Profile Templates** section appears, displaying the list of Profile Templates that have been added to the supported driver.
  - 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.
  - Select .  
The **Delete Calibration Template(s)** dialog box appears, asking you to confirm that you want to delete the selected Profile Templates.
  - 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

- Access the [Calibration Admin Preferences](#) page.
- In the pane, select **Manual Templates**.  
The **Manual Templates** workspace appears, displaying a list of available manual templates.
- 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:
  - 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.
  - 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, select .  
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 .
5. Select **Yes**.  
The selected Calibration Asset Configuration record is deleted.

# Chapter 11

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## Data Loader

### Topics:

- [About the Calibration Data Loaders](#)
- [About the Calibration Data Loaders Requirements](#)
- [About the Calibration Data Loaders 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 Loaders

Using the Calibration Data Loader, you can implement Calibration Management when you have calibration data in a legacy system, which is not supported by APM. To import data using the Calibration Data Loader, APM provides an Excel template, `Calibration_DataLoader.xlsx`, `Calibration_Management_Functional_Test.xlsx`, which supports baseline Calibration Management in 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 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 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 APM.

After importing the data, the Calibration Data Loader creates the following records in 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 Template, Functional Test
- Calibration Template Detail, Functional Test
- Calibration Task
- Calibration, Analog
- Calibration, Discrete
- Calibration, Single Component Analyzer
- Calibration, Multi-Component Analyzer
- Calibration, Functional Test
- Calibration Results, Analog
- Calibration Results, Discrete
- Calibration Results, Analyzer
- Calibration Results, Functional Test
- Calibration Recommendation



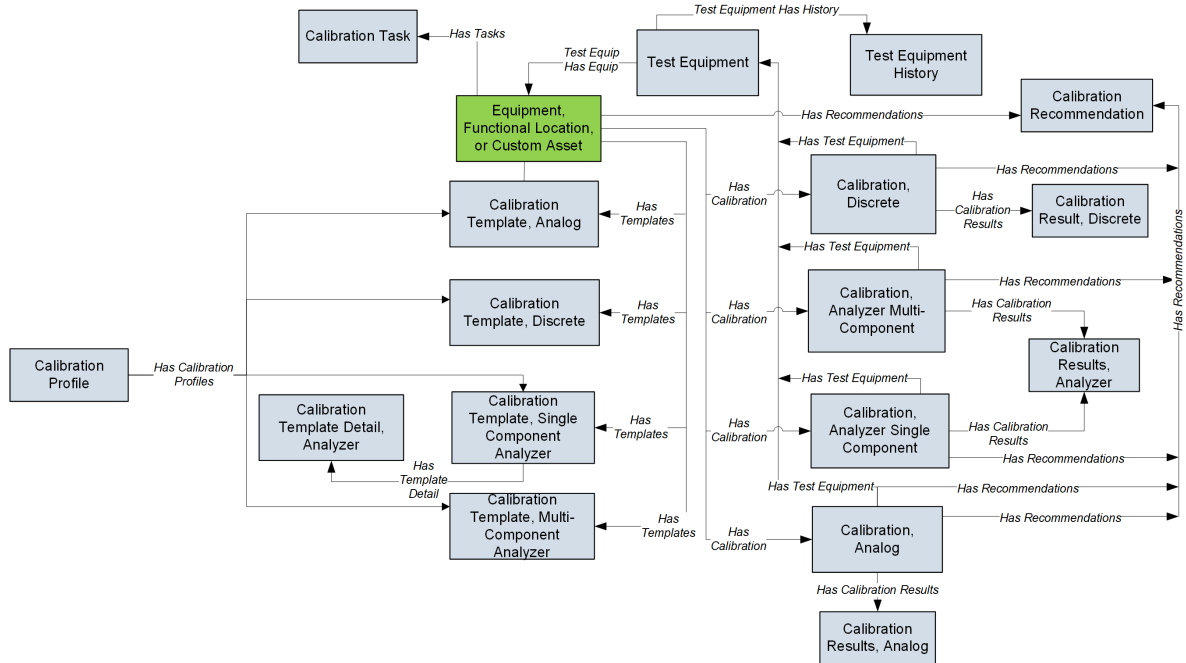
## About the Calibration Data Loaders Requirements

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 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 Loaders 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
  - Calibration Template, Functional Test
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, Multi Component Template and Functional Test 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
  - Calibration Template, Functional Test

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 Functional Test Detail worksheet is processed. If Calibration Template Detail, Functional Test 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, Functional Test record that you have specified in the Template Parent ID column Formatted: Font: Bold, Complex Script Font: Bold ©
11. 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.

12. 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
- Calibration, Functional Test

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.

13. 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.
- If the Calibration Result from Calibration\_Management\_Functional\_Test.xlsx is processed, and the Calibration Results, Functional Test record that you have specified with the Event ID and Calibration Sequence Number columns exist, then the Calibration Results, Functional Test record is updated. Otherwise, it is created and linked to the Calibration, Functional Test record that you have specified in the Event ID column.

14. 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, APM provides the data loader workbook (*Calibration.xlsx* and *Calibration-Functional Test.xlsx*) that supports baseline Calibration Management in 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 (Calibration.xlsx):

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	This worksheet is used to create or update Calibration Template Detail, Analyzer records.  <b>Note:</b> You can use the same worksheet to create or update Calibration Template Detail, Analyzer records for a profile template or an applied template.
Calibration Task	This worksheet is used to create or update Calibration Task records.

<b>Worksheet</b>	<b>Description</b>
Calibration Event	This worksheet is used to create or update the following records: <ul style="list-style-type: none"> <li>• Calibration, Analog</li> <li>• Calibration, Discrete</li> <li>• Calibration, Single Component Analyzer</li> <li>• Calibration, Multi-Component Analyzer</li> </ul>
Calibration Result	For manual calibration, this worksheet is used to create or update the following records: <ul style="list-style-type: none"> <li>• Calibration Results, Analog</li> <li>• Calibration Result, Discrete</li> <li>• Calibration Results, Analyzer</li> </ul> <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.

The following table provides a list of the worksheets that are included in the data loader workbook (Calibration-Functional Test.xlsx):

<b>Worksheet</b>	<b>Description</b>
ProfileTemplate	This worksheet is used to create or update Calibration Profile Templates records.
Functional Test Detail	This worksheet is used to create or update Calibration Template Detail, Functional Test records.
Calibration Profile	This worksheet is used to create or update Calibration Profile records.
Functional Test Template	This worksheet is used to create or update Calibration Template, Functional Test records.
Calibration Task	This worksheet is used to create or update CalibrationTask records.
Calibration Event	This worksheet is used to create or update Calibration, Functional Test records.
Calibration Result	This worksheet is used to create or update Calibration Results, Functional Test records.
Calibration Recommendation	This worksheet is used to create or update Calibration Recommendation records.

## 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	<b>Lookup Fields</b>	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	<b>Fields Required for Calculation</b>	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	<b>Recommended Fields</b>	Indicates columns that are recommended to contain values.
Green	<b>Custom Fields</b>	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 APM will be blank.

## Worksheet Details

The workbook `Calibration.xlsx` has following worksheets:

### 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_UNIT_S_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><b>Important:</b> Site Reference records must preexist in 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"> <li>Enter the site name to designate which site the Test Equipment or Standard Gas Cylinder record, once loaded into APM, will be filtered by.</li> <li>-or-</li> <li>Enter *Global* to indicate a that the site reference should be left global. Meaning that it will not be filtered by site in APM.</li> </ul> <p><b>Note:</b> 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_CATEGORY_C	Character (50)	None
Certification Supplier is ISO/IEC 17025 Certified	MI_TESTEQUIP_CERT_SUPPLIER_C	Character (5)	None
Class	MI_TESTEQUIP_SAP_CLASS_C	Character (50)	None
NIST Traceability Required	MI_TESTEQUIP_NIST_REQUIRED_C	Character (5)	None

Field Caption	Field ID	Data Type (Length)	Comments
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
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_IN TV_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_VN DR_C	Character (50)	None
Maintenance Plant	MI_TESTEQUIP_MAINT_PL ANT_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_SUPP_L_C	Character	A value is required.
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.

Field Caption	Field ID	Data Type (Length)	Comments
Standard Gas Cylinder Description	MI_SG000000_CYL_DESCR_C	Character (255)	None
Minimum Cylinder Pressure	MI_SGCY0000_MIN_CYL_PRES_N	Numeric	None
Actual Sample Volume	MI_SGCY0000_SMPL_VOL_N	Numeric	None
Laboratory Analysis Number	MI_SGCY0000_LAB_NBR_C	Character (50)	None
Cylinder Connection Number	MI_SGCY0000_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_SGCY0000_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_SGCY0000_CYL_MFR_C	Character (50)	None
Cylinder Size	MI_SGCY0000_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_SGCY0000_CYL_EXP_D	Date	Enter a value in the following format: YYYY-MM-DD HH:mm:ss
In Service Date	MI_SGCY0000_CYL_IN_SRVC_D	Date	Enter a value in the following format: YYYY-MM-DD HH:mm:ss
Cylinder Owner	MI_SGCY0000_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_N M_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.
Standard Component UOM	MI_SGCM0000_CMPNT_U OM_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

Field Caption	Field ID	Data Type (Length)	Comments
Standard Gas Cylinder ID	MI_SG000000_CYL_ID	Character (50)	Enter the ID of the Standard Gas Cylinder.
Standard Balance Content	MI_SGCM0000_BLNCCNT_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.										
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_TMCADSC</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_TMCADSC	Single component analyzer	MI_TMCASCAN	Multi-component analyzer	MI_TMCAMCAN
Calibration Type	Calibration Family ID												
Analog	MI_TMCAAN00												
Discrete	MI_TMCADSC												
Single component analyzer	MI_TMCASCAN												
Multi-component analyzer	MI_TMCAMCAN												

Field Caption	Field ID	Data Type (Length)	Comments
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_ASS ESSMENT 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>
Input Type	MI_TMCA0000_INPUT_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_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.</p>

Field Caption	Field ID	Data Type (Length)	Comments										
Output Type	MI_TMCA0000_OUTPU_TY P_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_UOM_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 1094 1414 1570"> <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.										
Primary Output URV (Analog)	MI_TMCA0000_PRI_OUT_URV_N	Numeric	A value is required for analog calibration.										



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 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_CNTC_T_ST_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_REPEAT_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_REFERENCES 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.

Field Caption	Field ID	Data Type (Length)	Comments										
Enable Automated Calibrations	MI_TMCA0000_ENABL_AU TO_CAL_F	Boolean	Enter True or False.										
Custom Input Lower Range Value	MI_TMCA0000_CUST_IN_L RV_N	Numeric	None										
Custom Input Upper Range Value	MI_TMCA0000_CUST_IN_U RV_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_R N_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>CALIBRATIO_N_DRUCK_UOM_LIST</td> </tr> <tr> <td>Druck DPI61x</td> <td>CALIBRATIO_N_DRUCK_UOM_LIST</td> </tr> <tr> <td>CMX</td> <td>CALIBRATIO_N_CMX_UOM_LIST</td> </tr> </tbody> </table>	Calibration Type	System Code Table	Fluke 74X	UOME	Druck DPI620 (Genii)	CALIBRATIO_N_DRUCK_UOM_LIST	Druck DPI61x	CALIBRATIO_N_DRUCK_UOM_LIST	CMX	CALIBRATIO_N_CMX_UOM_LIST
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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 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												
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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_CFG_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.										

Field Caption	Field ID	Data Type (Length)	Comments
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_CHAR	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_TMCADSC</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_TMCADSC	Single component analyzer	MI_TMCASCAN	Multi-component analyzer	MI_TMCAMCAN
Calibration Type	Calibration Family ID												
Analog	MI_TMCAAN00												
Discrete	MI_TMCADSC												
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 APM) will be updated to include the values in the following fields: <ul style="list-style-type: none"> <li>• Asset ID as configured in the Asset ID Configuration</li> <li>• Calibration Type</li> <li>• Calibration Strategy</li> <li>• Primary Input Range Units</li> <li>• Primary Output Range Units</li> </ul>
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_TYPE 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.
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_TYPE 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										
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_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>CALIBRATIO_N_DRUCK_UOM_LIST</td> </tr> <tr> <td>Druck DPI61x</td> <td>CALIBRATIO_N_DRUCK_UOM_LIST</td> </tr> <tr> <td>CMX</td> <td>CALIBRATIO_N_CMX_UOM_LIST</td> </tr> </tbody> </table>	Calibration Type	System Code Table	Fluke 74X	UOME	Druck DPI620 (Genii)	CALIBRATIO_N_DRUCK_UOM_LIST	Druck DPI61x	CALIBRATIO_N_DRUCK_UOM_LIST	CMX	CALIBRATIO_N_CMX_UOM_LIST
Calibration Type	System Code Table												
Fluke 74X	UOME												
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Druck DPI61x	CALIBRATIO_N_DRUCK_UOM_LIST												
CMX	CALIBRATIO_N_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 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_CH R	Character (255)	A value is required and must be unique. This value identifies the Calibration Profile.  <b>Note:</b> 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_ASS ESSMENT 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.

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_REFERENCES 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_AU_TO_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_R N_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>CALIBRATIO N_DRUCK_U OM_LIST</td> </tr> <tr> <td>Druck DPI61x</td> <td>CALIBRATIO N_DRUCK_U OM_LIST</td> </tr> <tr> <td>CMX</td> <td>CALIBRATIO N_CMX_UOM _LIST</td> </tr> </tbody> </table>	Calibration Type	System Code Table	Fluke 74X	UOME	Druck DPI620 (Genii)	CALIBRATIO N_DRUCK_U OM_LIST	Druck DPI61x	CALIBRATIO N_DRUCK_U OM_LIST	CMX	CALIBRATIO N_CMX_UOM _LIST
Calibration Type	System Code Table												
Fluke 74X	UOME												
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CMX	CALIBRATIO N_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>CALIBRATIO N_DRUCK_U OM_LIST</td> </tr> <tr> <td>Druck DPI61x</td> <td>CALIBRATIO N_DRUCK_U OM_LIST</td> </tr> <tr> <td>CMX</td> <td>CALIBRATIO N_CMX_UOM _LIST</td> </tr> </tbody> </table>	Calibration Type	System Code Table	Fluke 74X	UOME	Druck DPI620 (Genii)	CALIBRATIO N_DRUCK_U OM_LIST	Druck DPI61x	CALIBRATIO N_DRUCK_U OM_LIST	CMX	CALIBRATIO N_CMX_UOM _LIST
Calibration Type	System Code Table												
Fluke 74X	UOME												
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Druck DPI61x	CALIBRATIO N_DRUCK_U OM_LIST												
CMX	CALIBRATIO N_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.

### 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 APM) will be updated to include the values in the following fields: <ul style="list-style-type: none"> <li>• Asset ID as configured in the Asset ID Configuration</li> <li>• Calibration Type</li> <li>• Calibration Strategy</li> <li>• Primary Input Range Units</li> </ul>
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_TYPE 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.
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_TYPE 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.
Max Error Limit	MI_TMCA0000_ERR_LIM_N	Numeric	A value is required.

Field Caption	Field ID	Data Type (Length)	Comments										
Primary Input LRV	MI_TMCA0000_PRI_IN_LRV_N	Numeric	A value is required.										
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_CNTC_T_ST_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_REPEAT_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 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_CHARACTER	Character (255)	A value is required and must be unique. This value identifies the Calibration Profile.  <b>Note:</b> The Profile ID will create a relationship between this Applied Template and the Profile.
Template State	MI_TM000000_STATE_CODE	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_REFERENCES 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_AUTOCAL_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
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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
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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_C NFG_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.

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												
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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.
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.

Field Caption	Field ID	Data Type (Length)	Comments										
Primary Input Range Units	MI_TMCA0000_PRI_IN_RV_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												
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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.										
Primary Output URV	MI_TMCA0000_PRI_OUT_URV_N	Numeric	A value is required.										

Field Caption	Field ID	Data Type (Length)	Comments										
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
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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. 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>										

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 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_CHARACTER	Character (255)	A value is required and must be unique. This value identifies the Calibration Profile.  <b>Note:</b> 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



Field Caption	Field ID	Data Type (Length)	Comments
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_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.
Lock Output Range	MI_TMCA0000_LCK_OUT_RANGE_F	Boolean	Enter True or False.
Manufacturer	MI_TMCA0000_MFR_C	Character (255)	None
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_DATA_F	Boolean	Enter True or False.
Max Error Limit	MI_TMCA0000_ERR_LIM_N	Numeric	None
Tag Description	MI_TMCA0000_TAG_DESCRIPTION_C	Character (255)	None
Local ID	MI_TMCA0000_LOCAL_ID_N	Numeric	None
Repeat Count	MI_TMCA0000_REPEAT_COUNT_N	Numeric	None
Reset Set Point	MI_TMCA0000_RESET_SETPOINT_N	Numeric	None

Field Caption	Field ID	Data Type (Length)	Comments
Ramp Time	MI_TMCA0000_RAMP_TIME_N	Numeric	None
Error Assessment	MI_TMCA0000_ERR_ASSESS_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 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_CHARACTER	Character (255)	A value is required and must be unique. This value identifies the Calibration Profile.  <b>Note:</b> The Profile ID will create a relationship between this Applied Template and the Profile.
Template Short Description	MI_TM000000_SHRT_DSC_CHARACTER	Character (255)	None
Enterprise <number> Code	MI_TM000000_ERP_01_CD_CHARACTER	Character (50)	None
Enterprise <number> Description	MI_TM000000_ERP_01_DESC_CHARACTER	Character (255)	None
Template Type	MI_TM000000_TEMP_TYPE_CHARACTER	Character (50)	None
Template Long Description	MI_TM000000_LNG_DSC_CHARACTER	Text	None
Template State	MI_TM000000_STATE_CHARACTER	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_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.
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_N M_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_VA L_N	Numeric	None
Component Units	MI_TDCAAN00_CMPNT_UO M_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_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.
Standard Balance Content	MI_TDCAAN00_BLNC_CNT NT_F	Boolean	Enter True or False.

Field Caption	Field ID	Data Type (Length)	Comments
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 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
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
Task State	MI_TASK_TASK_STATE_CH R	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_NB R	Numeric	None

Field Caption	Field ID	Data Type (Length)	Comments
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_TEMPLATE_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
- Calibration, Functional Test

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.



Field Caption	Field ID	Data Type (Length)	Comments
Calibration Strategy	MI_EVCALIBR_STRATEGY_C	Character (20)	A value is required and must match the ID of an existing Calibration Strategy.  <b>Note:</b> If you are creating Functional Test calibration record without defining the Functional Test templates, then add MI_EVCALIBR_STRATEGY_C field to Calibration Event worksheet in Calibration - Functional Test.xlsx file before import.
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.

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 APM database, an error message appears, stating that the Asset is not found, and the batch is not imported.										
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_EVCAANL G</td> </tr> <tr> <td>Discrete</td> <td>MI_EVCADS CT</td> </tr> <tr> <td>Single Component Analyzer</td> <td>MI_EVCAAN SC</td> </tr> <tr> <td>Multi-Component Analyzer</td> <td>MI_EVCAAN MC</td> </tr> </tbody> </table>	Calibration Type	Value	Analog	MI_EVCAANL G	Discrete	MI_EVCADS CT	Single Component Analyzer	MI_EVCAAN SC	Multi-Component Analyzer	MI_EVCAAN MC
Calibration Type	Value												
Analog	MI_EVCAANL G												
Discrete	MI_EVCADS CT												
Single Component Analyzer	MI_EVCAAN SC												
Multi-Component Analyzer	MI_EVCAAN MC												

Field Caption	Field ID	Data Type (Length)	Comments										
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												
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												

Field Caption	Field ID	Data Type (Length)	Comments
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.
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

Field Caption	Field ID	Data Type (Length)	Comments
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
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

Field Caption	Field ID	Data Type (Length)	Comments
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_CHR	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_UOM_C	Character (10)	None
Secondary Input URV	MI_EVCALIBR_SEC_IN_URV_N	Numeric	None

Field Caption	Field ID	Data Type (Length)	Comments
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 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"> <li>• Calibration Results, Analog</li> <li>• Calibration Result, Discrete</li> <li>• Calibration Results, Analyzer</li> </ul>
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.



Field Caption	Field ID	Data Type (Length)	Comments								
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.								
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_VALL_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								

Field Caption	Field ID	Data Type (Length)	Comments
Input Measure AL	MI_CALRESLT_IN_MEAS_AL_N	Numeric	None
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_TARGET_COMPL_DATE_DT	Date	A value is required. Enter a value in the following format: YYYY-MM-DD HH:mm:ss

Field Caption	Field ID	Data Type (Length)	Comments
Recommendation ID	MI_REC_ID	Character (255)	A value is required and must be unique. This value identifies the Recommendation.
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 APM database, an error message appears, stating that the Asset is not found, and the batch is not imported.
Calibration Type	MI_RECCLBN_CALEVNT_C AT_CHR	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 _CHR	Character (100)	Enter the Event ID.
Reevaluation Notification List	MI_REC_REEVAL_NOTIF_LI ST_CHR	Character (2000)	None
Days Before Due Date to be Notified	MI_REC_DAYS_BEF_DUE_D T_NOT_NBR	Numeric	None
Generate Work Request	MI_REC_WO_INTERFACE_F LAG_F	Boolean	Enter True or False.

Field Caption	Field ID	Data Type (Length)	Comments
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_APPROVER_NAME_C	Character (255)	None
Required Equipment Status	MI_REC_REQUI_EQUIP_STATUS_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.

Field Caption	Field ID	Data Type (Length)	Comments
Completion Comments	MI_REC_CLOSE_COMME_T X	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_C HR	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
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_NOT IF_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_REVIE_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

### Worksheet Details

The workbook Calibration-Functional Test.xlsx has following worksheets:

## Functional Test Detail Worksheet

The Functional Test Detail worksheet stores details of the Calibration Template Detail and Functional Test 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 Parent ID	PARENT_ID	Character(255)	A value is required and must be unique. This value identifies the Parent Template for the detail template
Sequence Number	MI_TDCAFC00_SEQUE_NUMBE_N	Numeric	A value is required and must be unique and in ascending order
Instruction	MI_TDCAFC00_INSTR_T	Character(255)	A value is required to indicate the calibration steps or instructions
Response Type	MI_TDCAFC00_INSTR_TYPE_C	Character(255)	A value is required to indicate the response type from the pick list
Expected Response	MI_TDCAFC00_EXPD_RESP_C	Character(255)	A value is required if the Validate check box is selected. This value will be compared with user entered response in the calibration event
Validate	MI_TDCAFC00_VALIDATE_RESP_F	Boolean	A value is required if you want to compare the Expected Response with user entered response in the Calibration event to make it as PASS or FAIL
Condition 1	MI_TDCAFC00_CONDI_01_C	Character(255)	Provide the value if the Response Type is set to Selection
Condition 2	MI_TDCAFC00_CONDI_02_C	Character(255)	Provide the value if the Response Type is set to Selection

Field Caption	Field ID	Data Type (Length)	Comments
Condition 3	MI_TDCAFC00_CONDI_03_C	Character(255)	Provide the value if the Response Type is set to Selection
Condition 4	MI_TDCAFC00_CONDI_04_C	Character(255)	Provide the value if the Response Type is set to Selection
Condition 5	MI_TDCAFC00_CONDI_05_C	Character(255)	Provide the value if the Response Type is set to Selection
Condition 6	MI_TDCAFC00_CONDI_06_C	Character(255)	Provide the value if the Response Type is set to Selection
Condition 7	MI_TDCAFC00_CONDI_07_C	Character(255)	Provide the value if the Response Type is set to Selection
Condition 8	MI_TDCAFC00_CONDI_08_C	Character(255)	Provide the value if the Response Type is set to Selection
Condition 9	MI_TDCAFC00_CONDI_09_C	Character(255)	Provide the value if the Response Type is set to Selection
Condition 10	MI_TDCAFC00_CONDI_10_C	Character(255)	Provide the value if the Response Type is set to Selection

### Calibration Result

The Calibration Result worksheet stores details of the Calibration Result, Functional Test 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.
Event ID	MI_CALRESLT_ID	Character(255)	A value is required and must be unique. This value identifies the Parent Event ID to which this record links as result record.

Field Caption	Field ID	Data Type (Length)	Comments
Sequence Number	MI_CALRESLT_TST_SEQ_N	Numeric	This value is copied from its template detail record by default. Provide the value if you want to override it. Otherwise remove this column the worksheet.
Instruction	MI_CRFUNC00_INSTR_T	Character(255)	This value is copied from its template detail record by default. Provide the value if you want to override it. Otherwise remove this column the worksheet.
Response Type	MI_CRFUNC00_INSTR_TYP E_C	Character(255)	This value is copied from its template detail record by default. Provide the value if you want to override it. Otherwise remove this column the worksheet
Expected Response	MI_CRFUNC00_EXPD_RESP _C	Character(255)	This value is copied from its template detail record by default. Provide the value if you want to override it. Otherwise remove this column the worksheet
Validate	MI_CRFUNC00_VALIDATE_ RESP_F	Boolean	This value is copied from its template detail record by default. Provide the value if you want to override it. Otherwise remove this column the worksheet Enter 1 for Validate, Enter 0 for not to Validate.
Response 1	MI_CRFUNC00_RESPO_01_ C	Character(255)	A value required to record the response. If Validate is true, this value will be compared with expected response from the template detail record. This field will be picklist when the Response Type is either Boolean or Selection



Field Caption	Field ID	Data Type (Length)	Comments
Response 2	MI_CRFUNC00_RESPO_02_C	Character(255)	This field is enabled only if the Response Type is Selection. This field display as picklist and values copied from its template detail record. Provide the value if required
Response 3	MI_CRFUNC00_RESPO_03_C	Character(255)	This field is enabled only if the Response Type is Selection. This field display as picklist and values copied from its template detail record. Provide the value if required
Response 4	MI_CRFUNC00_RESPO_04_C	Character(255)	This field is enabled only if the Response Type is Selection. This field display as picklist and values copied from its template detail record. Provide the value if required
Response 5	MI_CRFUNC00_RESPO_05_C	Character(255)	This field is enabled only if the Response Type is Selection. This field display as picklist and values copied from its template detail record. Provide the value if required
Response 6	MI_CRFUNC00_RESPO_06_C	Character(255)	This field is enabled only if the Response Type is Selection. This field display as picklist and values copied from its template detail record. Provide the value if required
Response 7	MI_CRFUNC00_RESPO_07_C	Character(255)	This field is enabled only if the Response Type is Selection. This field display as picklist and values copied from its template detail record. Provide the value if required

Field Caption	Field ID	Data Type (Length)	Comments
Response 8	MI_CRFUNC00_RESPO_08_C	Character(255)	This field is enabled only if the Response Type is Selection. This field display as picklist and values copied from its template detail record. Provide the value if required
Response 9	MI_CRFUNC00_RESPO_09_C	Character(255)	This field is enabled only if the Response Type is Selection. This field display as picklist and values copied from its template detail record. Provide the value if required
Response 10	MI_CRFUNC00_RESPO_10_C	Character(255)	This field is enabled only if the Response Type is Selection. This field display as picklist and values copied from its template detail record. Provide the value if required

## 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

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## 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 Calibration Management.

# Chapter 13

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## Reference

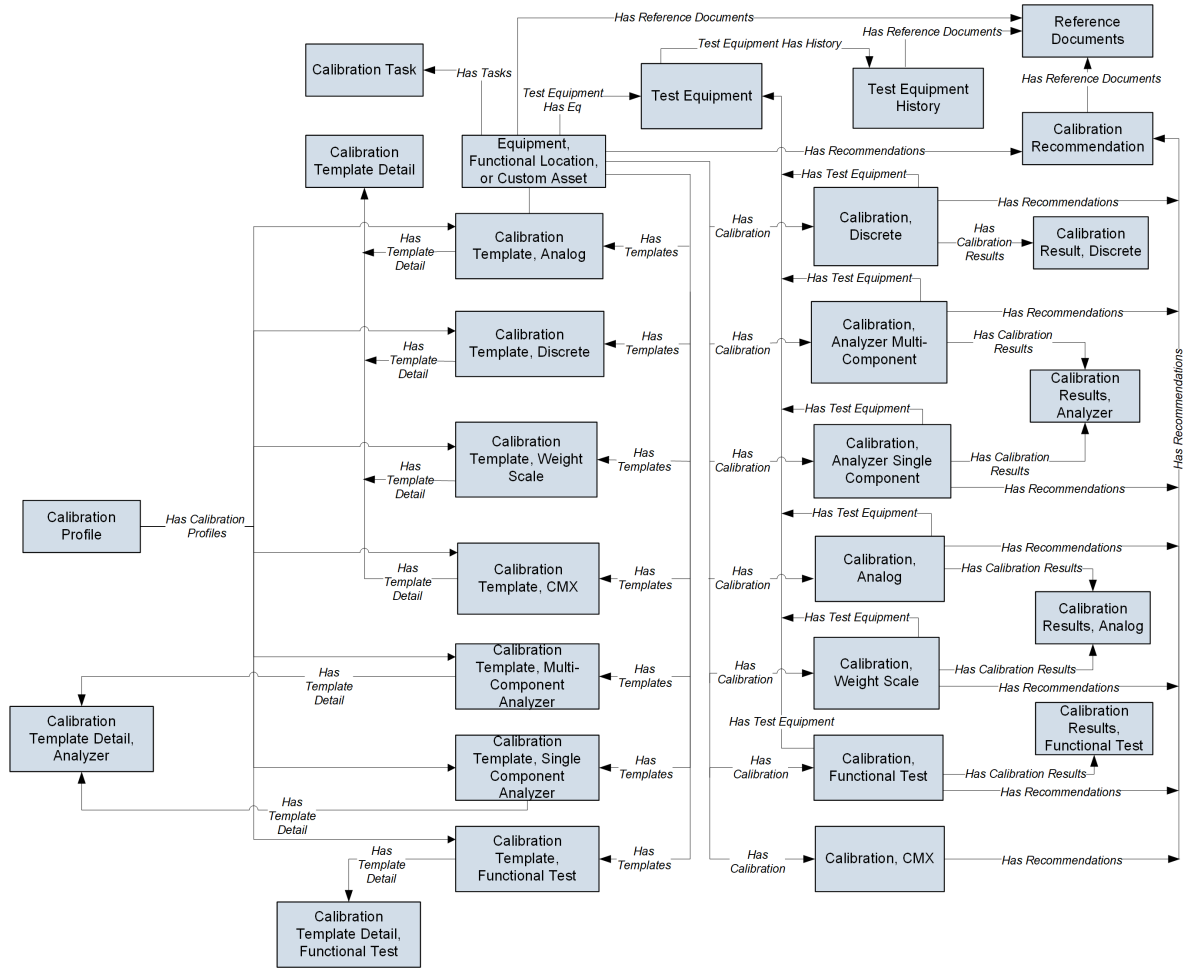
### Topics:

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

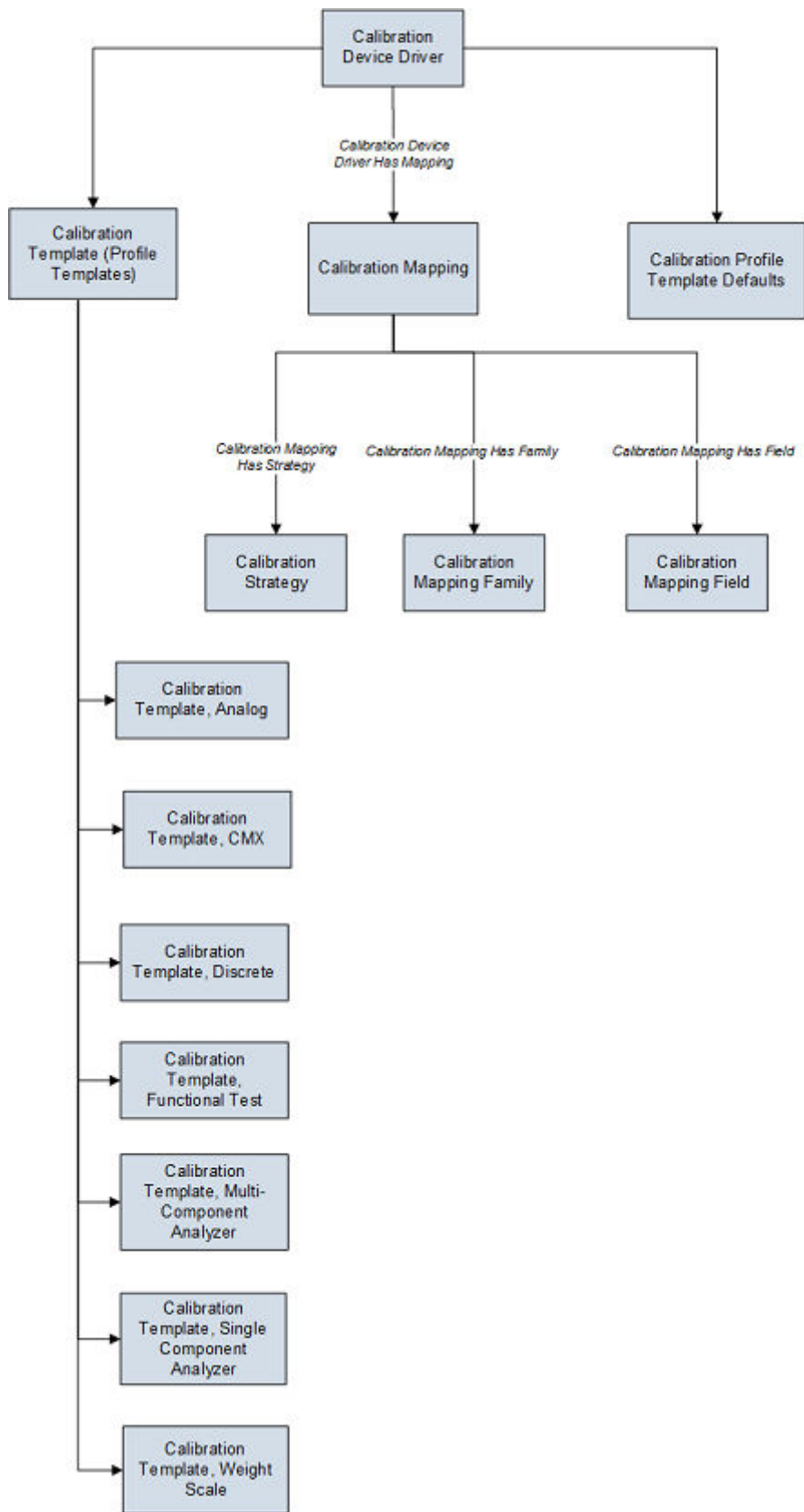
# General Reference

## 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 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.

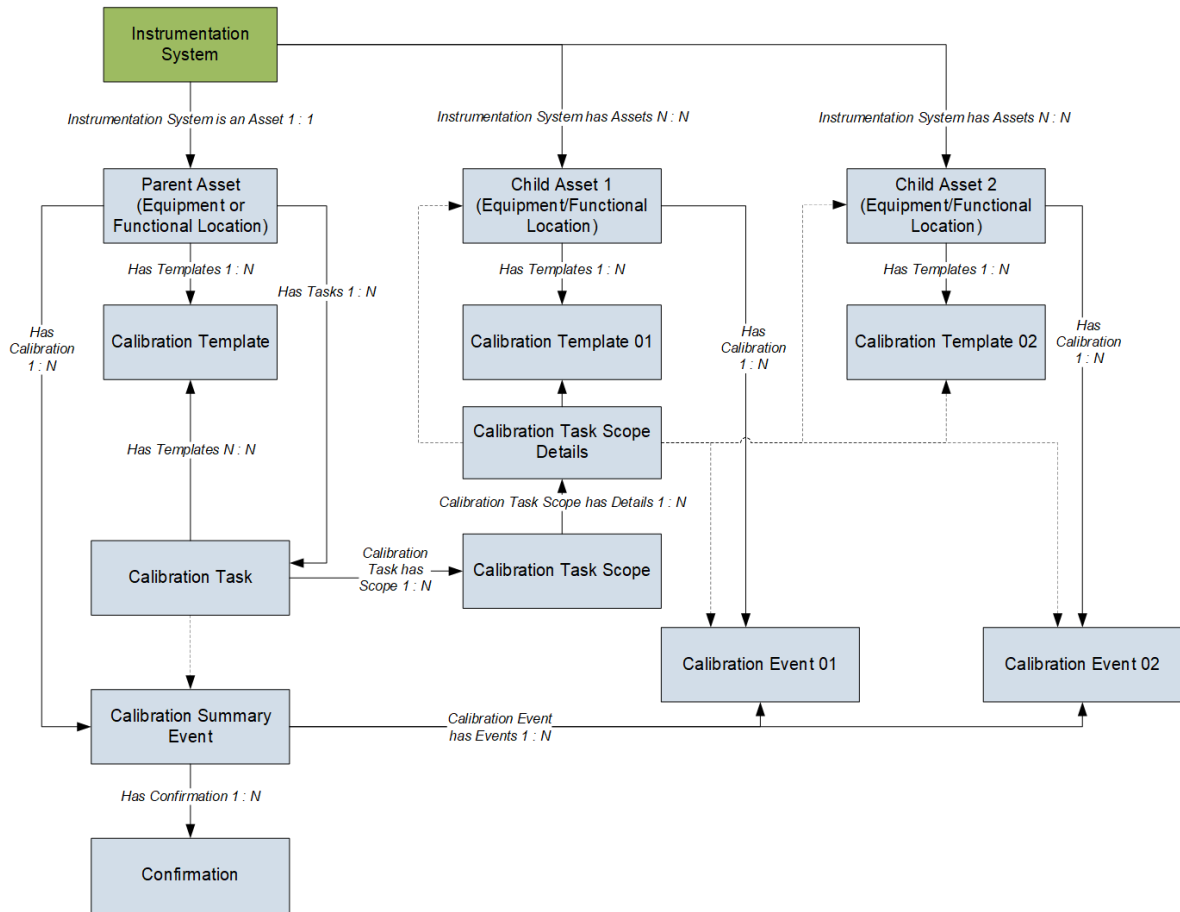
In the baseline APM database, the Standard Gas family is related to the Standard Gas Components family through the Has Components relationship family. Standard Gas Cylinder records and Standard Gas Component records store information about gas components that are associated with a piece of equipment 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

<b>Family</b>	<b>MI Calibration Administrator</b>	<b>MI Calibration User</b>	<b>MI Calibration Viewer</b>
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
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

<b>Family</b>	<b>MI Calibration Administrator</b>	<b>MI Calibration User</b>	<b>MI Calibration Viewer</b>
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
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

<b>Family</b>	<b>MI Calibration Administrator</b>	<b>MI Calibration User</b>	<b>MI Calibration Viewer</b>
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
<b>Relationship Families</b>			
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
Functional Location Has Functional Location(s)	View	View	View

<b>Family</b>	<b>MI Calibration Administrator</b>	<b>MI Calibration User</b>	<b>MI Calibration Viewer</b>
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

Family	MI Calibration Administrator	MI Calibration User	MI Calibration Viewer
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
<code>asset-safety/calibration/calibration-mgmt</code> : Displays the <b>Calibration Management Overview</b> page.			
<code>asset-safety/calibration/calibration-mgmt/&lt;EntityKey&gt;</code> : Displays the <b>Calibration Management Overview</b> page of an asset.			
<EntityKey>	Specifies the entity key of the asset whose <b>Calibration Management Overview</b> page you want to access	Any numeric Entity Key that corresponds to an asset.	Opens the <b>Calibration Management Overview</b> page of the asset.  <b>Note:</b> On the <b>Calibration Management Overview</b> page of an asset, the graphs do not appear.
<code>asset-safety/calibration/&lt;DatasheetType&gt;/&lt;EntityKey&gt;</code> : 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.



Element	Description	Accepted Value(s)	Notes
<DatasheetType>	Specifies the type of the datasheet	calibration-task-datasheet	None
		calibration-event-datasheet	
		profile-template-datasheet	
		MI_SGCY0000	
		MI_TESTEQUIP	
<p><b>calibration/instrumentation-system-overview</b>: Displays the Instrumentation System Overview page.</p> <p><b>calibration/instrumentation-system/&lt;key&gt;</b>: 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.</p>			
<key>	Specifies the entity key of the Instrumentation System record that you want to access.	Entity key of the Instrumentation System record	N/A
<p><b>calibration/instrumentation-system/&lt;key&gt;/task/&lt;taskKey&gt;</b>: Displays the Calibration Task and Calibration Task Scope details.</p>			
<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.
<p><b>calibration/instrumentation-system/&lt;key&gt;/asset/&lt;assetKey&gt;</b>: Displays the Calibration Task and Calibration Task Scope details.</p>			
<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.
<p><b>calibration/instrumentation-system-event/&lt;eventKey&gt;</b>: Displays the selected Calibration Summary Event record in a new tab, and the child events associated with it.</p>			
<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
<b>asset-safety/calibration/calibration-mgmt</b>	The <b>Calibration Management Overview</b> page.
/asset-safety/calibration/calibration-mgmt/ <b>14356783</b>	The <b>Calibration Management Overview</b> page for the asset whose entity key is 14356783.
asset-safety/calibration/ <b>calibration-task-datasheet/14356783</b>	The datasheet of the Calibration Task whose entity key is 14356783.
asset-safety/calibration/ <b>calibration-event-datasheet/14356784</b>	The datasheet of the Calibration Event whose entity key is 14356784.
asset-safety/calibration/ <b>profile-template-datasheet/&lt;template-type&gt;/14356785</b>  <b>Note:</b> <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"> <li>• 0 – Open Existing Templates</li> <li>• 1 – Create New Fluke 74X Templates</li> <li>• 2 – Create New Druck DPI620 (Genni) Templates</li> <li>• 3 – Create New Druck DPI61x Templates</li> <li>• 4 – Create New CMX Templates</li> <li>• 5 – Create new Manual Templates</li> </ul>	The datasheet of the Calibration Template whose entity key is 14356785.
asset-safety/calibration/ <b>MI_TESTEQUIP/14356786</b>	The datasheet of the Test Equipment whose entity key is 14356786.
asset-safety/calibration/ <b>MI_SGCY0000/14356787</b>	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.

<b>Table ID</b>	<b>Table Description</b>	<b>Function</b>
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.
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.

Table ID	Table Description	Function
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"> <li>• Calibration Passed</li> <li>• Overall AF Pass/Fail</li> <li>• Overall AL Pass/Fail</li> </ul>
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 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 × 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 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

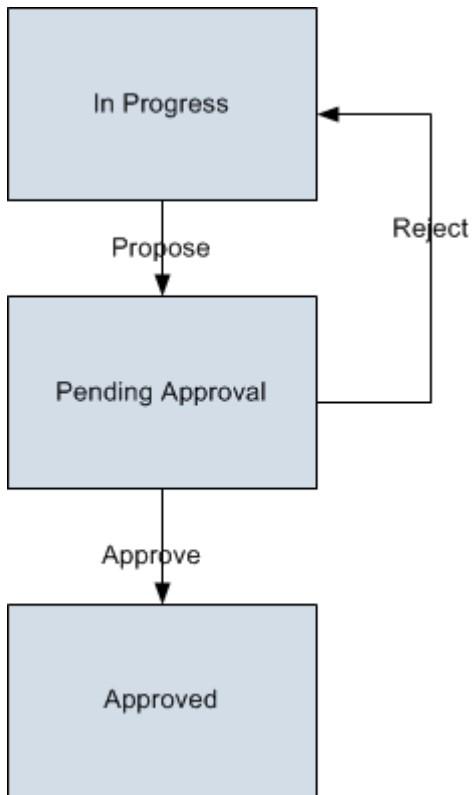
The following baseline record states are configured for the Calibration family:

- **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

Site X Records	Site Y Records	Site Z Records	Global Records
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 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><b>Note:</b></p> <p>Before you select a query, ensure that the Asset ID field specified in the query matches the fields configured in the <b>New Asset ID Configuration</b> 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 <b>Calibration Queue</b> section, the <b>Calibration Events</b> section, and the <b>Linked Assets</b> subsection in the <b>Calibration Profile</b> 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	<p>The Identification of the asset that you have calibrated.</p>	<p>This field is populated with the Equipment ID of the asset that is linked to the Calibration.</p> <p>This field is labeled <b>Select Equipment</b> on the datasheet. You can select the Equipment ID hyperlink to view the Asset details.</p>
Asset Short Description	Character	<p>A brief description of the asset that you have calibrated.</p>	<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 <b>Equipment Short Description</b> on the datasheet. You can modify this value if needed.</p>

Field	Data Type	Description	Behavior and Usage
Asset 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.  This field is labeled <b>Equipment Type</b> on the datasheet. You can modify this value if needed.
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.
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"> <li>• PASS</li> <li>• FAIL</li> </ul>
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.

Field	Data Type	Description	Behavior and Usage
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 <b>Select Calibration</b> on the datasheet.
Calibration Type	Character	The type of calibration event.	This field is disabled and populated with the value CMX.
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 <b>Calibration End Date</b> 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 <b>Comments</b> 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 <b>Instrument Manufacturer</b> on the datasheet. 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.  This field is labeled <b>Instrument Model Number</b> 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 <b>Calibration Start Date</b> on the datasheet. 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.  This field is labeled <b>Instrument Serial Number</b> 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.



Field	Data Type	Description	Behavior and Usage
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.	<p>In automated calibration, this field is populated based on the calibration results that are received from the Beamex CMX calibration software.</p> <p>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:</p> <ul style="list-style-type: none"> <li>• PASS</li> <li>• FAIL</li> </ul>
Overall AF Error Max	Numeric	A number that corresponds to the highest error value recorded from all the As Found values.	<p>In automated calibration, this field is populated based on the calibration results that are received from the Beamex CMX calibration software.</p> <p>In manual calibration, you can enter a value manually.</p>
Overall AL Error Max	Numeric	The highest error value recorded from all the As Left values.	<p>In automated calibration, this field is populated based on the calibration results that are received from the Beamex CMX calibration software.</p> <p>In manual calibration, you can enter a value manually.</p>

Field	Data Type	Description	Behavior and Usage
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"> <li>• PASS</li> <li>• FAIL</li> </ul>
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 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.

Field	Data Type	Description	Behavior and Usage
Mapping Direction	Character	The type of direction of the outgoing data from APM to a calibrator and incoming data from a calibrator to APM.	This field appears a list and contains the following values: <ul style="list-style-type: none"> <li>• Send</li> <li>• Receive</li> </ul> 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"> <li>• Analog Calibration</li> <li>• Discrete Calibration</li> <li>• Functional Test</li> </ul> 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"> <li>• Blank if you created the Calibration Profile in APM V3.6.0.0.0 or later, and then upgraded to the current version. In this case, a value is not required.</li> <li>• Enabled and populated automatically if you created the Calibration Profile in APM V4.2.0.0.0 or later, and then upgraded to the current version.</li> <li>• Disabled and populated with the value CMX if the value in the Device Type field is CMX.</li> <li>• Disabled and blank if the value in the Device Type field is Analyzer - Multi Component.</li> <li>• Disabled and populated automatically if the value in the Device Type field is Analyzer - Single Component or Functional - Manual.</li> <li>• Enabled and blank in all other scenarios.</li> </ul> <p>The list of values in this field is filtered based on the <a href="#">mapping ID that is associated with the selected profile template</a>. If the mapping ID, however, does not contain a <a href="#">mapped strategy</a>, then a list of all the strategies for the template type associated with the mapping ID appears in this field.</p> <p><b>Note:</b> 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"> <li>• In the Calibration Strategy field, select the calibration strategy.</li> <li>-or-</li> <li>• In the Profile Template field, select the profile template.</li> </ul>

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"> <li>Blank if you created the Calibration Profile in APM V3.6.0.0.0 or later, and then upgraded to the current version. In this case, a value is not required.</li> <li>Enabled and populated automatically if you created the Calibration Profile in APM V4.2.0.0.0 or later, and then upgraded to the current version.</li> <li>Enabled and blank if you create the Calibration Profile in the current version.</li> </ul> <p>On the datasheet, this field appears as a list labeled <b>Calibration Type</b>, and contains the following values:</p> <ul style="list-style-type: none"> <li>Analog - Manual</li> <li>Analyzer - Multi Component</li> <li>Analyzer - Single Component</li> <li>CMX</li> <li>Druck DPI61x</li> <li>Druck DPI620 (Genii)</li> <li>Fluke 74X</li> <li>Functional Manual</li> <li>Switch - Manual</li> </ul>
Is Upgraded	Boolean	Indicates whether the Calibration Profile was created in an earlier version of APM or in the current version.	<p>This check box is enabled and:</p> <ul style="list-style-type: none"> <li>Selected if the Calibration Profile was created in an earlier version of APM (i.e., before upgrading to the current version).</li> <li>Cleared if the Calibration Profile was created in the current version.</li> </ul> <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 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"> <li>• Only Input (INPUT)</li> <li>• Only Output (OUTPUT)</li> <li>• Both Input and Output (INPUT AND OUTPUT)</li> <li>• None (NONE)</li> </ul>										
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 1071 1414 1575"> <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"> <li>• Linear</li> <li>• None</li> </ul> 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"> <li>• Pressure</li> <li>• Temperature</li> <li>• Other</li> </ul> <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"> <li>• Only Input (INPUT)</li> <li>• Only Output (OUTPUT)</li> <li>• Both Input and Output (INPUT AND OUTPUT)</li> <li>• None (NONE)</li> </ul> <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"> <li>• Linear</li> <li>• None</li> </ul> <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>

Field	Data Type	Description	Behavior and Usage
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"> <li>• If the value is set to 0, the auto range function in the calibrator is turned off.</li> <li>• If the value is set to 1, the auto range function in the calibration is turned on.</li> </ul> <p>This field is required.</p>
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"> <li>• You can select the value Yes (Y) only if the value in the Input Type field is Pressure or Flow.</li> <li>• 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).</li> <li>• You can select the value Yes (Y) only if the value in the Manual Entered Values field is None (NONE).</li> </ul> <p>This field is required.</p>



Field	Data Type	Description	Behavior and Usage
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"> <li>• Analog Calibration</li> <li>• Discrete Calibration</li> <li>• Functional Test</li> </ul> <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 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.
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.

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.	<p>The state of this field depends on the state of other fields.</p> <ul style="list-style-type: none"> <li>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.</li> <li>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.</li> </ul> <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"> <li>The MI Calibration Administrator or the MI Calibration User Security Group</li> <li>-or-</li> <li>The MI Safety Admin, MI Safety Power, or the MI Safety User Security Role</li> </ul> <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"> <li>Fluke 74X</li> <li>Druck DPI620 (Genii)</li> <li>Druck DPI61x</li> <li>CMX</li> <li>Analog - Manual</li> <li>Analyzer - Multi Component</li> <li>Analyzer - Single Component</li> <li>Functional - Manual</li> <li>Switch - Manual</li> </ul>
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"> <li>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.</li> <li>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.</li> </ul> <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.

<b>Field</b>	<b>Data Type</b>	<b>Description</b>	<b>Behavior and Usage</b>
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.

Field	Data Type	Description	Behavior and Usage
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"> <li> <b>Percent of Range:</b>  When you select this value, the Calibration Error Limit field is enabled, and the Engineering Units Error Limit field is disabled. </li> <li> <b>Engineering Units:</b>  When you select this value, the Engineering Units Error Limit field is enabled, and the Calibration Error Limit field is disabled. </li> </ul>
Event End Date	Date	The date on which the calibration event was completed.	<p>In the datasheet, this field appears as a text box labeled <b>Calibration End Date</b>.</p> <p>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.</p>
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.

Field	Data Type	Description	Behavior and Usage
Input Characteristic Curve	Character	The characteristics of the input signal to the instrument that you are calibrating.	<p>This field contains the following values:</p> <ul style="list-style-type: none"> <li>• Linear</li> <li>• Percent</li> <li>• Square Root</li> <li>• None</li> </ul> <p>This field appears as a list that is populated by the MI_CHARACTERISTIC_CURVE System Code Table.</p>
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.	<p>This field contains the following values:</p> <ul style="list-style-type: none"> <li>• Scheduled</li> <li>• Repair</li> <li>• Unscheduled</li> <li>• New Installation</li> </ul> <p>This field appears as a list that is populated by the MI_MAINTENANCE_TYPE System Code Table.</p>
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.	<p>This field contains the following values:</p> <ul style="list-style-type: none"> <li>• Linear</li> <li>• Percent</li> <li>• Square Root</li> <li>• None</li> </ul> <p>This field appears as a list that is populated by the MI_CHARACTERISTIC_CURVE System Code Table.</p>



<b>Field</b>	<b>Data Type</b>	<b>Description</b>	<b>Behavior and Usage</b>
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><b>Note:</b></p> <ul style="list-style-type: none"> <li>This functionality gets enabled for each calibration result record if the corresponding template detail record's <b>Validate</b> check box is selected.</li> <li>Currently, in the <b>Response Type</b> drop-down menu, if you select <b>Selection</b>, 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.</li> </ul>
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 <b>Calibration Expire</b> 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 <b>ID No</b>.</p> <ul style="list-style-type: none"> <li>If you select a Test Equipment that is certified, this field will be shaded green.</li> <li>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.</li> </ul> <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 <b>Last Calibration Date</b> 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 <b>Manufacturer</b> 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 <b>Model Number</b> 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 <b>Serial Number</b> 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 <b>Status</b> 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.

Field	Data Type	Description	Behavior and Usage
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.
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"> <li>• Percentage (%)</li> <li>• Parts Per Million (PPM)</li> <li>• Parts Per Billion (PPB)</li> </ul> <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.

Field	Data Type	Description	Behavior and Usage
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.
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.



<b>Field</b>	<b>Data Type</b>	<b>Description</b>	<b>Behavior and Usage</b>
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.
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.

<b>Field</b>	<b>Data Type</b>	<b>Description</b>	<b>Behavior and Usage</b>
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.
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.

<b>Field</b>	<b>Data Type</b>	<b>Description</b>	<b>Behavior and Usage</b>
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.
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.

Field	Data Type	Description	Behavior and Usage
Validate Deadband	Boolean	Indicates whether or not you want the 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 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"> <li>Analog Calibration</li> <li>Single Component Analyzer</li> <li>WeightScale Calibration</li> </ul>
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>

Field	Data Type	Description	Behavior and Usage
Strategy Name	Character	The name of the calibration strategy	You can enter a value manually. This field is required.
Template Type	Character	The type of calibration template.	This field appears as a list and contains the following Calibration templates: <ul style="list-style-type: none"> <li>• Analog Calibration</li> <li>• Discrete Calibration</li> <li>• Multi-Component Analyzer</li> <li>• Single Component Analyzer</li> <li>• WeightScale Calibration</li> <li>• Functional Test</li> </ul> This field is required.
Up Count	Numeric	The number of records in the Up value range of the test point for a calibration strategy.	You can enter a value manually. 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. This field is required only if the Template Type field contains at least one of the following: <ul style="list-style-type: none"> <li>• Analog Calibration</li> <li>• Single Component Analyzer</li> <li>• WeightScale Calibration</li> </ul>

## 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 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.

Field	Data Type	Description	Behavior and Usage
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.	<p>This field is used to indicate the Calibration Result of the Instrumentation System. This is a read-only field.</p> <p>This field is set to PASS if the <b>Overall AF Pass/Fail</b> for all the child events is set to PASS.</p> <p>This field is set to FAIL if the <b>Overall AF Pass/Fail</b> for any of the child events is set to FAIL.</p>
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.	<p>This field is used to indicate the Calibration Result of the Instrumentation System. This is a read-only field.</p> <p>This field is set to PASS if the <b>Overall AL Pass/Fail</b> for all child events is set to PASS.</p> <p>This field is set to FAIL if the <b>Overall AL Pass/Fail</b> of any of the child events is set to FAIL.</p>

## 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.	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. 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> <p>Max Date = Last Date + Max Interval</p>
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.

Field	Data Type	Description	Behavior and Usage
Min Date	Date	The earliest date on which you can perform the calibration task if it is a recurring task.	This field is disabled and calculated as follows:  Min Date = Last Date + Min Interval
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"> <li>• A Security User with Update and Insert privileges to the Task family.</li> </ul> <p>-or-</p> <ul style="list-style-type: none"> <li>• A member of the MI Calibration Administrator Security Group.</li> </ul> <p>If you clear this check box, all the fields other than the following are disabled:</p> <ul style="list-style-type: none"> <li>• Task State</li> <li>• Task Assigned To</li> <li>• Route Number</li> <li>• Reoccurring</li> </ul> <p>If you modify the value in any of the fields in the preceding list, the <b>Modifiable</b> check box is automatically selected. At that point, you can modify the fields that were previously disabled.</p>

Field	Data Type	Description	Behavior and Usage
Next Date	Date	The suggested date by which 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.
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.

Field	Data Type	Description	Behavior and Usage
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
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.

Field	Data Type	Description	Behavior and Usage
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

Field	Data Type	Description	Behavior and Usage
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 <b>APM</b> 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"> <li>• 2 Up</li> <li>• 2 Down</li> <li>• 2 Up then 2 Down</li> <li>• 3 Up</li> <li>• 3 Down</li> <li>• 3 Up then 3 Down</li> <li>• 5 Up</li> <li>• 5 Down</li> <li>• 5 Up then 5 Down</li> <li>• 5 Up then 1 Down</li> <li>• 11 Up</li> <li>• 11 Down</li> <li>• 11 Up then 11 Down</li> </ul> <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 <a href="#">type of template that you selected on the Profile Template page</a>, this field is populated with one of the following values:</p> <ul style="list-style-type: none"> <li>• If you selected <b>FLUKE 74X</b> on the <b>Mappings</b> page, then the Calibration Type field contains the value FLUKE 74X.</li> <li>• If you selected <b>Druck DPI620 (Genii)</b> on the <b>Mappings</b> page, then the Calibration Type field contains the value Druck DPI620 (Genii).</li> <li>• If you selected <b>Druck DPI61x</b> on the <b>Mappings</b> page, then the Calibration Type field contains the value Druck DPI61x.</li> <li>• If you selected <b>CMX</b> on the <b>Mappings</b> page, then the Calibration Type field contains the value CMX.</li> <li>• If you selected <b>Manual Templates</b>, then the Calibration Type field contains the value Analog - Manual. When this option is selected, the fields on the <b>Automated Calibration Parameters</b> section are disabled.</li> </ul>



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 <b>Custom Input Details</b> subsection:</p> <ul style="list-style-type: none"> <li>• Custom Input Upper Range</li> <li>• Custom Input Range UOM</li> </ul> <p>This field is enabled and required only when the <b>Custom Input Values</b> 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 <b>Custom Input Details</b> subsection:</p> <ul style="list-style-type: none"> <li>• Custom Input Lower Range</li> <li>• Custom Input Upper Range</li> </ul> <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 <b>Custom Input Values</b> 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 <b>Custom Input Details</b> subsection:</p> <ul style="list-style-type: none"> <li>• Custom Input Lower Range</li> <li>• Custom Input Upper Range</li> </ul> <p>This field is enabled and required only when the <b>Custom Input Values</b> 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 <b>Custom Input Values</b> check box:</p> <ul style="list-style-type: none"> <li>• The following fields are enabled: <ul style="list-style-type: none"> <li>◦ Custom Input Lower Range</li> <li>◦ Custom Input Upper Range</li> <li>◦ Custom Input Range UOM</li> </ul> </li> <li>• The <b>Manual Entered Input Values</b> check box is automatically selected and disabled.</li> </ul>
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 <b>Custom Output Details</b> subsection:</p> <ul style="list-style-type: none"> <li>• Custom Output Upper Range</li> <li>• Custom Output Range UOM</li> </ul> <p>This field is enabled and required only when the <b>Custom Input Values</b> 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 <b>Custom Output Details</b> subsection:</p> <ul style="list-style-type: none"> <li>• Custom Output Lower Range</li> <li>• Custom Output Upper Range</li> </ul> <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 <b>Custom Input Values</b> 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 <b>Custom Output Details</b> subsection:</p> <ul style="list-style-type: none"> <li>• Custom Output Lower Range</li> <li>• Custom Output Range UOM</li> </ul> <p>This field is enabled and required only when the <b>Custom Input Values</b> 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 <b>Custom Output Values</b> check box:</p> <ul style="list-style-type: none"> <li>• The following fields are enabled: <ul style="list-style-type: none"> <li>◦ Custom Output Lower Range</li> <li>◦ Custom Output Upper Range</li> <li>◦ Custom Output Range UOM</li> </ul> </li> <li>• The <b>Manual Entered Input Values</b> check box is automatically selected and disabled.</li> </ul>

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 <b>Primary Input Details</b> section:</p> <ul style="list-style-type: none"> <li>• Primary Input LRV</li> <li>• Primary Input URV</li> <li>• Primary Input Range Units</li> </ul> <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"> <li>• Pressure: FLUKE PRESSURE BASE UOM</li> <li>• Temperature: FLUKE TEMPERATURE BASE UOM</li> <li>• Voltage: FLUKE VOLTAGE BASE UOM</li> <li>• Current: FLUKE CURRENT BASE UOM</li> <li>• Frequency: FLUKE FREQUENCY BASE UOM</li> <li>• Resistance: FLUKE RESISTANCE BASE UOM</li> <li>• Other: CALIBRATION UOM GENERAL</li> </ul> <p><b>Note:</b> 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 <b>Primary Output Details</b> section:</p> <ul style="list-style-type: none"> <li>• Primary Output LRV</li> <li>• Primary Output URV</li> <li>• Primary Output Units</li> </ul> <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"> <li>• Pressure: FLUKE PRESSURE BASE UOM</li> <li>• Temperature: FLUKE TEMPERATURE BASE UOM</li> <li>• Voltage: FLUKE VOLTAGE BASE UOM</li> <li>• Current: FLUKE CURRENT BASE UOM</li> <li>• Frequency: FLUKE FREQUENCY BASE UOM</li> <li>• Resistance: FLUKE RESISTANCE BASE UOM</li> <li>• Other: CALIBRATION UOM GENERAL</li> </ul> <p><b>Note:</b> 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"> <li>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.</li> <li>If the Error Assessment field in the Calibration Setup Defaults record contains the value Percentage of Scale, this field is disabled and blank.</li> </ul> <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"> <li><b>Percent of Range:</b> When you select this value, the Max Error Limit field is enabled, and the Engineering Units Error Limit field is disabled.</li> <li><b>Engineering Units:</b> When you select this value, the Engineering Units Error Limit field is enabled, and the Max Error Limit field is disabled.</li> </ul>
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"> <li>on</li> <li>off</li> </ul> <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 ML_STATUS System Code Table.</p>

Field	Data Type	Description	Behavior and Usage
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"> <li>• on</li> <li>• off</li> </ul> <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 ML_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"> <li>• Pressure</li> <li>• Temperature</li> <li>• Voltage</li> <li>• Current</li> <li>• Frequency</li> <li>• Resistance</li> </ul> <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"> <li>• Pressure</li> <li>• Voltage</li> <li>• Current</li> </ul> <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"> <li>• Pressure</li> <li>• Temperature</li> <li>• Voltage</li> <li>• Current</li> <li>• Frequency</li> <li>• Resistance</li> <li>• Other</li> </ul> <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"> <li>• Pressure</li> <li>• Temperature</li> <li>• Flow</li> <li>• Level</li> <li>• Weight</li> <li>• Voltage</li> <li>• Current</li> <li>• Frequency</li> <li>• Resistance</li> <li>• Other</li> </ul> <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 <b>TC Linear</b> 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"> <li>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.</li> <li>Primary Output Range LRV, if the value in the Output Type field is Temperature.</li> </ul>
Linear TC URV	Numeric	A number representing upper value on the linear thermocouple range.	<p>This field is enabled only when the <b>TC Linear</b> 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"> <li>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.</li> <li>Primary Output Range URV, if the value in the Output Type field is Temperature.</li> </ul>
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"> <li><b>Disabled:</b> The loop power is supplied by the calibrator device.</li> <li><b>Enabled_24V:</b> The loop power is supplied by a 24V DC power supply.</li> <li><b>Enabled_28V:</b> The loop power is supplied by a 28V DC power supply.</li> </ul> <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"> <li><b>Yes:</b> The loop power is supplied by an external source.</li> <li><b>No:</b> The loop power is supplied by the calibrator device.</li> </ul> <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 MI_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"> <li>Enabled only when the value stored in the Calibration Type field is FLUKE 74X.</li> <li>Disabled and selected if the <b>Custom Input Values</b> check box is selected.</li> <li>Disabled if the Performs Square Root field contains the value Yes (Y).</li> </ul>

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"> <li>Enabled only when the value stored in the Calibration Type field is FLUKE 74X.</li> <li>Selected and disabled if the <b>Custom Output Values</b> check box is selected.</li> </ul>
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"> <li>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.</li> </ul> <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:  <math>(\langle \text{Engineering Units Error Limit} \rangle / \langle \text{URV} \rangle - \langle \text{LRV} \rangle \times 100)</math>  ...where:</p> <ul style="list-style-type: none"> <li><math>\langle \text{Engineering Units Error Limit} \rangle</math> is the value in the Engineering Units Error Limit field.</li> <li><math>\langle \text{URV} \rangle</math> is the value in the Primary Input Range URV field.</li> <li><math>\langle \text{LRV} \rangle</math> is the value in the Primary Input Range LRV field.</li> </ul> <ul style="list-style-type: none"> <li>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.</li> </ul> <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	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>This field appears as a list, and contains the following options:</p> <ul style="list-style-type: none"> <li>• on</li> <li>• off</li> </ul> <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"> <li>• Pressure</li> <li>• Temperature</li> <li>• Voltage</li> <li>• Current</li> <li>• Frequency</li> <li>• Resistance</li> <li>• Observed</li> </ul> <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"> <li>• Pressure</li> <li>• Voltage</li> <li>• Current</li> <li>• Observed</li> </ul> <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"> <li>• Pressure</li> <li>• Temperature</li> <li>• Voltage</li> <li>• Current</li> <li>• Frequency</li> <li>• Resistance</li> <li>• Other</li> </ul> <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"> <li>• Pressure</li> <li>• Temperature</li> <li>• Flow</li> <li>• Level</li> <li>• Voltage</li> <li>• Current</li> <li>• Frequency</li> <li>• Resistance</li> <li>• Other</li> <li>• HART</li> </ul>

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"> <li>You can select the value Yes (Y) only if the value in the Input Type field is Pressure or Flow.</li> <li>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).</li> <li>When the <b>Manual Entered Input Values</b> check box on the <b>Automated Calibration Parameters</b> section is selected, this field will be disabled and populated with the value No (N).</li> </ul> <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 <b>Primary Input Details</b> section:</p> <ul style="list-style-type: none"> <li>Primary_Input_URV</li> <li>Primary_Input_Range_Units</li> </ul> <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 <b>Primary Input Details</b> section:</p> <ul style="list-style-type: none"> <li>Primary_Input_LRV</li> <li>Primary_Input_URV</li> </ul> <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 <b>APM</b> 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 <b>Primary Input Details</b> section:</p> <ul style="list-style-type: none"> <li>Primary_Input_LRV</li> <li>Primary_Input_Range_Units</li> </ul> <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 <b>Primary Output Details</b> section:</p> <ul style="list-style-type: none"> <li>Primary_Output_URV</li> <li>Primary_Output_Range_Units</li> </ul> <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 <b>Primary Output Details</b> section:</p> <ul style="list-style-type: none"> <li>Primary_Output_LRV</li> <li>Primary_Output_URV</li> </ul> <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 <b>APM</b> 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 <b>Primary Output Details</b> section:</p> <ul style="list-style-type: none"> <li>Primary_Output_LRV</li> <li>Primary_Output_Range_Units</li> </ul> <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 <b>APM</b> 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"> <li>The value stored in the Calibration Type field is FLUKE 74X.</li> <li>The value stored in the Output Type field is Temperature.</li> <li>The Temperature Element Type field contains a value that is an RTD type.</li> </ul> <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"> <li>2_Wire_Ohms</li> <li>3_Wire_Ohms</li> <li>4_Wire_Ohms</li> </ul>

<b>Field</b>	<b>Data Type</b>	<b>Description</b>	<b>Behavior and Usage</b>
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"> <li>• GE DRUCK RTD TYPE (GE Druck RTD Type) <ul style="list-style-type: none"> <li>◦ None</li> <li>◦ Type CU10 (427) RTD</li> <li>◦ Type NI100 (672) RTD</li> <li>◦ Type NI120 (672) RTD</li> <li>◦ Type PT100 (385) RTD</li> <li>◦ Type PT100 (392) RTD</li> <li>◦ Type PT1000 (385) RTD</li> <li>◦ Type PT200 (385) RTD</li> <li>◦ Type PT50 (385) RTD</li> <li>◦ Type PT500 (385) RTD</li> </ul> </li> <li>• GE DRUCK TC TYPE (GE Druck TC Type) <ul style="list-style-type: none"> <li>◦ None</li> <li>◦ Type B Thermocouple</li> <li>◦ Type C Thermocouple</li> <li>◦ Type D Thermocouple</li> <li>◦ Type E Thermocouple</li> <li>◦ Type J Thermocouple</li> <li>◦ Type K Thermocouple</li> <li>◦ Type L Thermocouple</li> <li>◦ Type N Thermocouple</li> <li>◦ Type R Thermocouple</li> <li>◦ Type S Thermocouple</li> <li>◦ Type T Thermocouple</li> <li>◦ Type U Thermocouple</li> </ul> </li> </ul>

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"> <li>• FLUKE RTD TYPE (Fluke RTD Type) <ul style="list-style-type: none"> <li>◦ None</li> <li>◦ Type CU10 (427) RTD</li> <li>◦ Type NI120 (672) RTD</li> <li>◦ Type PT100 (385) RTD</li> <li>◦ Type PT100 (3916) RTD</li> <li>◦ Type PT100 (3926) RTD</li> <li>◦ Type PT1000 (385) RTD</li> <li>◦ Type PT200 (385) RTD</li> <li>◦ Type PT500 (385) RTD</li> </ul> </li> <li>• FLUKE TC TYPE (Fluke TC Type) <ul style="list-style-type: none"> <li>◦ None</li> <li>◦ Type B Thermocouple</li> <li>◦ Type C Thermocouple</li> <li>◦ Type E Thermocouple</li> <li>◦ Type J Thermocouple</li> <li>◦ Type K Thermocouple</li> <li>◦ Type L Thermocouple</li> <li>◦ Type N Thermocouple</li> <li>◦ Type R Thermocouple</li> <li>◦ Type S Thermocouple</li> <li>◦ Type T Thermocouple</li> <li>◦ Type U Thermocouple</li> </ul> </li> </ul> <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"> <li>• Development</li> <li>• Approved</li> <li>• Obsolete</li> </ul>

## 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 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"> <li>Controlled (Controlled)</li> <li>Controlled and Measured (Controlled and Measured)</li> <li>Keyed (Keyed)</li> <li>Measured (Measured)</li> <li>Sourced (Sourced)</li> <li>N/A (N/A)</li> </ul> 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_TYPE System Code Table. This field contains a list of the following input types:</p> <ul style="list-style-type: none"> <li>• CHECKLIST (CHECKLIST)</li> <li>• ELECTRICAL (ELECTRICAL)</li> <li>• MASS (MASS)</li> <li>• PRESSURE (PRESSURE)</li> <li>• TEMPERATURE (TEMPERATURE)</li> <li>• VALUE (VALUE)</li> <li>• N/A (N/A)</li> </ul> <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"> <li>• Keyed (Keyed)</li> <li>• Measured (Measured)</li> <li>• FOUNDATION H1 (FOUNDATION H1)</li> <li>• HART (HART)</li> <li>• PROFIBUS PA (PROFIBUS PA)</li> <li>• N/A (N/A)</li> </ul> <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_CM_X_TEMPLATE_OUTP UT_TYPE System Code Table. This field contains a list of the following output types :</p> <ul style="list-style-type: none"> <li>• ELECTRICAL (ELECTRICAL)</li> <li>• MASS (MASS)</li> <li>• PRESSURE (PRESSURE)</li> <li>• STATE (STATE)</li> <li>• TEMPERATURE (TEMPERATURE)</li> <li>• VALUE (VALUE)</li> <li>• N/A (N/A)</li> </ul> <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 <b>Primary Input Details</b> subsection of the <b>Equipment Details</b> 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"> <li>• Checklist (cl)</li> <li>• Checklist, IEC60079-17, Table 1 (c6007917_1)</li> <li>• Checklist, IEC60079-17, Table 2 (c6007917_2)</li> </ul> <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"> <li>• Checklist (cl)</li> <li>• Checklist, IEC60079-17, Table 1 (c6007917_1)</li> <li>• Checklist, IEC60079-17, Table 2 (c6007917_2)</li> </ul> <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 <b>Primary Input Details</b> subsection of the <b>Equipment Details</b> 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"> <li>• Checklist (cl)</li> <li>• Checklist, IEC60079-17, Table 1 (c6007917_1)</li> <li>• Checklist, IEC60079-17, Table 2 (c6007917_2)</li> </ul> <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 <b>Primary Output Details</b> subsection of the <b>Equipment Details</b> 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"> <li>• Checklist (cl)</li> <li>• Checklist, IEC60079-17, Table 1 (c6007917_1)</li> <li>• Checklist, IEC60079-17, Table 2 (c6007917_2)</li> <li>• Electrical Switch (es)</li> <li>• Pressure Switch (ps)</li> <li>• Temperature Switch (ts)</li> </ul> <p>For other values of Template Code, this field is required.</p>

Field	Data Type	Description	Behavior and Usage
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"> <li>• Checklist (cl)</li> <li>• Checklist, IEC60079-17, Table 1 (c6007917_1)</li> <li>• Checklist, IEC60079-17, Table 2 (c6007917_2)</li> <li>• Electrical Switch (es)</li> <li>• Pressure Switch (ps)</li> <li>• Temperature Switch (ts)</li> </ul> <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 <b>Primary Output Details</b> subsection of the <b>Equipment Details</b> 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"> <li>• Checklist (cl)</li> <li>• Checklist, IEC60079-17, Table 1 (c6007917_1)</li> <li>• Checklist, IEC60079-17, Table 2 (c6007917_2)</li> <li>• Electrical Switch (es)</li> <li>• Pressure Switch (ps)</li> <li>• Temperature Switch (ts)</li> </ul> <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 <b>Primary Output Details</b> subsection of the <b>Equipment Details</b> 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"> <li>• Pressure Switch (ps)</li> <li>• Temperature Switch (ts)</li> <li>• Electrical Switch (es)</li> </ul> <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 <b>Primary Output Details</b> subsection of the <b>Equipment Details</b> 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"> <li>• Pressure Switch (ps)</li> <li>• Temperature Switch (ts)</li> <li>• Electrical Switch (es)</li> </ul> <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 <b>Primary Output Details</b> subsection of the <b>Equipment Details</b> section.</p> <p>This field contains a list of the following values:</p> <ul style="list-style-type: none"> <li>• Opens</li> <li>• Closes</li> </ul> <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"> <li>• Pressure Switch (ps)</li> <li>• Temperature Switch (ts)</li> <li>• Electrical Switch (es)</li> </ul> <p>For other values of Template Code, this field is disabled.</p>

Field	Data Type	Description	Behavior and Usage
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 <b>Equipment Details</b> section of the datasheet are either enabled or disabled.</p> <p>This field is required.</p>
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.	<p>This field contains the value Development by default. You can select one of following values in this field:</p> <ul style="list-style-type: none"> <li>• Development (Development)</li> <li>• Approved (Approved)</li> <li>• Obsolete (Obsolete)</li> </ul>

## 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.
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. Enter the conditions which will be used to select from Expected Response field.
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"> <li>• <b>Yes/No:</b> The response will be either Yes or No.</li> <li>• <b>Number:</b> The response will be a numeric value.</li> <li>• <b>Text:</b> The response will be a text value.</li> <li>• <b>Selection:</b> The response will be one or more of the options provided in the Condition fields.</li> </ul>
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.

Field	Data Type	Description	Behavior and Usage
Expected Response	Character	The Response expected for the Instruction while performing Functional Test Calibration.	<p>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 mandatory, when Validate checkbox is selected.</p> <p>When all the template detail records are saved, this field becomes as either pick list or text box based on the Response Type selected:</p> <ul style="list-style-type: none"> <li>• <b>Yes/No:</b> The response will be either Yes or No.</li> <li>• <b>Number:</b> The response will be a numeric value.</li> <li>• <b>Text:</b> The response will be a text value.</li> <li>• <b>Selection:</b> The response will be one or more of the options provided in the Condition fields.</li> </ul>
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"> <li>• Increase</li> <li>• Decrease</li> </ul> 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"> <li>• Increase</li> <li>• Decrease</li> </ul>
Asset Key	Numeric	The Entity Key of the Asset record to which the Calibration Template record is linked. This field is used by the 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 <b>Calibration Administration</b> 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.

Field	Data Type	Description	Behavior and Usage
Calibration Type	Character	The type of calibration for which you are creating the template.	<p>This field is disabled.</p> <p>Based on the type of template that you selected on the <b>Profile Template</b> page, this field is populated with one of the following values:</p> <ul style="list-style-type: none"> <li>If you selected <b>FLUKE 74X</b> on the <b>Mappings</b> page, then the Calibration Type field contains the value FLUKE 74X.</li> <li>If you selected <b>Druck DPI620 (Genii)</b> on the <b>Mappings</b> page or the <b>Manual Templates</b> page, then the Calibration Type field contains the value Druck DPI620 (Genii).</li> <li>If you selected <b>Druck DPI61x</b> on the <b>Mappings</b> page, then the Calibration Type field contains the value Druck DPI61x.</li> <li>If you selected <b>Manual</b> on the <b>Mappings</b> page, then the Calibration Type field contains the value Switch - Manual. When this option is selected, the fields in the <b>Automated Calibration Parameters</b> section are disabled.</li> </ul> <p>Depending on the selection, the Input Type and Output Type fields are populated automatically.</p>
Custom Input Lower Range	Numeric	A number representing the lower range value for the custom input range.	<p>This field is labeled <b>Low</b> and is grouped with the following other fields in the <b>Automated Calibration Parameters</b> section:</p> <ul style="list-style-type: none"> <li>Custom Input Upper Range</li> <li>Custom Input Range UOM</li> </ul> <p>This field is enabled and required only when the <b>Custom Input Values</b> 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 <b>Automated Calibration Parameters</b> section:</p> <ul style="list-style-type: none"> <li>Custom Input Lower Range</li> <li>Custom Input Upper Range</li> </ul> <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 <b>Custom Input Values</b> check box is selected. 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
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 <b>Automated Calibration Parameters</b> section:</p> <ul style="list-style-type: none"> <li>• Custom Input Lower Range</li> <li>• Custom Input Range UOM</li> </ul> <p>This field is enabled and required only when the Custom Input Values check box is selected.</p>
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 <b>Primary Input Details</b> section:</p> <ul style="list-style-type: none"> <li>• Primary Input LRV</li> <li>• Primary Input URV</li> <li>• Primary Input Range Units</li> </ul> <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"> <li>• Pressure: FLUKE PRESSURE BASE UOM</li> <li>• Temperature: FLUKE TEMPERATURE BASE UOM</li> <li>• Voltage: FLUKE VOLTAGE BASE UOM</li> <li>• Current: FLUKE CURRENT BASE UOM</li> <li>• Frequency: FLUKE FREQUENCY BASE UOM</li> <li>• Resistance: FLUKE RESISTANCE BASE UOM</li> <li>• Other: CALIBRATION UOM GENERAL</li> </ul> <p><b>Note:</b> 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>

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"> <li>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.</li> <li>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.</li> </ul> <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><b>(&lt;Max Error Limit&gt;/100) x (&lt;URV&gt; - &lt;LRV&gt;)</b></p> <p>...where:</p> <ul style="list-style-type: none"> <li>&lt;Max Error Limit&gt; is the value in the Max Error Limit field.</li> <li>&lt;URV&gt; is the value in the Primary Input Range URV field.</li> <li>&lt;LRV&gt; is the value in the Primary Input Range LRV field.</li> </ul> <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>
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"> <li><b>Percent of Range:</b> When you select this value, the Max Error Limit field is enabled, and the Engineering Units Error Limit field is disabled.</li> <li><b>Engineering Units:</b> When you select this value, the Engineering Units Error Limit field is enabled, and the Error Limit field is disabled.</li> </ul> <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"> <li>on</li> <li>off</li> </ul> <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>

Field	Data Type	Description	Behavior and Usage
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"> <li>on</li> <li>off</li> </ul> <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 <b>TC Linear</b> 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"> <li>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.</li> <li>Primary Output Range LRV if the value in the Output Type field is Temperature.</li> </ul>
Linear TC URV	Numeric	A number representing upper value on the linear thermocouple range.	<p>This field is enabled only when the <b>TC Linear</b> 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"> <li>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.</li> <li>Primary Output Range URV if the value in the Output Type field is Temperature.</li> </ul>
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"> <li>Enabled only when the <b>Enable Automated Calibrations</b> check box is selected.</li> <li>Selected and disabled automatically when the <b>Custom Input Values</b> check box is selected.</li> </ul>



Field	Data Type	Description	Behavior and Usage
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"> <li>If the Error Assessment field in the Calibration Setup Defaults record contains the value Engineering Units, this field is disabled and blank.</li> <li>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.</li> </ul> <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"> <li>on</li> <li>off</li> </ul> <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>
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 <b>Primary Input Details</b> section:</p> <ul style="list-style-type: none"> <li>Primary Input URV</li> <li>Primary Input Range Units</li> </ul> <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 <b>Primary Input Details</b> section:</p> <ul style="list-style-type: none"> <li>Primary Input LRV</li> <li>Primary Input URV</li> </ul> <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 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>

Field	Data Type	Description	Behavior and Usage
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 <b>Primary Input Details</b> section:</p> <ul style="list-style-type: none"> <li>Primary Input LRV</li> <li>Primary Input Range Units</li> </ul> <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>
RTD Wiring Configuration	Character	The RTD wiring configuration associated with the calibration.	<p>This field is populated automatically if:</p> <ul style="list-style-type: none"> <li>The <b>Enable Automated Calibrations</b> check box is selected.</li> <li>The Temperature Element Type field contains a value that is an RTD type.</li> </ul>

Field	Data Type	Description	Behavior and Usage
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.	<p>This field is grouped with the following fields:</p> <ul style="list-style-type: none"> <li>Specified Minimum Dead Band Switch 1</li> <li>Validate Deadband</li> </ul> <p>This field is populated using the following calculation:</p> <p><b>&lt;Set point&gt; x &lt;Default Max Deadband&gt;</b></p> <p>...where:</p> <ul style="list-style-type: none"> <li>&lt;Set point&gt; is the value in the SW 1 Setpoint field.</li> <li>&lt;Default Max Deadband&gt; is the default value in the Discrete Max Deadband field in the Calibration Setup Defaults record.</li> </ul> <p>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.</p> <p>The 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.</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 needed.</p>

Field	Data Type	Description	Behavior and Usage
Specified Maximum Dead Band Switch 2	Numeric	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>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"> <li>• Specified Minimum Dead Band Switch 2</li> <li>• Validate Deadband</li> </ul> <p>This field is populated automatically using the following calculation: <math>\langle \text{Set point} \rangle \times \langle \text{Default Max Deadband} \rangle</math></p> <p>...where:</p> <ul style="list-style-type: none"> <li>• <math>\langle \text{Set point} \rangle</math> is the value in the SW 2 Setpoint field.</li> <li>• <math>\langle \text{Default Max Deadband} \rangle</math> is the default value in the Discrete Max Deadband field in the Calibration Setup Defaults record.</li> </ul> <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 APM system will include the dead band values in the pass/fail validation process only if the <b>Validate Deadband</b> 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	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>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"> <li>• Specified Maximum Dead Band Switch 1</li> <li>• Validate Deadband</li> </ul> <p>This field is populated automatically using the following calculation: <b>&lt;Set point&gt; x &lt;Default Min Deadband&gt;</b></p> <p>...where:</p> <ul style="list-style-type: none"> <li>• &lt;Set point&gt; is the value in the SW 1 Setpoint field.</li> <li>• &lt;Default Min Deadband&gt; is the value in the Discrete Min Deadband field in the Calibration Setup Defaults record.</li> </ul> <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 APM system includes the dead band values in the pass/fail validation process only if the <b>Validate Deadband</b> 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"> <li>Specified Maximum Dead Band Switch 2</li> <li>Validate Deadband</li> </ul> <p>This field is populated automatically using the following calculation: <b>&lt;Set point&gt; x &lt;Default Min Deadband&gt;</b></p> <p>...where:</p> <ul style="list-style-type: none"> <li>&lt;Set point&gt; is the value in the SW 2 Setpoint field.</li> <li>&lt;Default Min Deadband&gt; is the value in the Discrete Min Deadband field in the Calibration Setup Defaults record.</li> </ul> <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 APM system will include the dead band values in the pass/fail validation process only if the <b>Validate Deadband</b> 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"> <li>Normally Open (0)</li> <li>Normally Closed (1)</li> </ul> <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.

Field	Data Type	Description	Behavior and Usage
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"> <li>• Normally Open (0)</li> <li>• Normally Closed (1)</li> </ul> <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>
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.

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"> <li>• GE DRUCK RTD TYPE ( GE Druck RTD Type ) <ul style="list-style-type: none"> <li>◦ None</li> <li>◦ Type CU10 (427) RTD</li> <li>◦ Type NI100 (672) RTD</li> <li>◦ Type NI120 (672) RTD</li> <li>◦ Type PT100 (385) RTD</li> <li>◦ Type PT100 (392) RTD</li> <li>◦ Type PT1000 (385) RTD</li> <li>◦ Type PT200 (385) RTD</li> <li>◦ Type PT50 (385) RTD</li> <li>◦ Type PT500 (385) RTD</li> </ul> </li> <li>• GE DRUCK TC TYPE ( GE Druck TC Type ) <ul style="list-style-type: none"> <li>◦ None</li> <li>◦ Type B Thermocouple</li> <li>◦ Type C Thermocouple</li> <li>◦ Type D Thermocouple</li> <li>◦ Type E Thermocouple</li> <li>◦ Type J Thermocouple</li> <li>◦ Type K Thermocouple</li> <li>◦ Type L Thermocouple</li> <li>◦ Type N Thermocouple</li> <li>◦ Type R Thermocouple</li> <li>◦ Type S Thermocouple</li> <li>◦ Type T Thermocouple</li> <li>◦ Type U Thermocouple</li> </ul> </li> </ul>



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"> <li>• FLUKE RTD TYPE ( Fluke RTD Type ) <ul style="list-style-type: none"> <li>◦ None</li> <li>◦ Type CU10 (427) RTD</li> <li>◦ Type NI120 (672) RTD</li> <li>◦ Type PT100 (385) RTD</li> <li>◦ Type PT100 (3916) RTD</li> <li>◦ Type PT100 (3926) RTD</li> <li>◦ Type PT1000 (385) RTD</li> <li>◦ Type PT200 (385) RTD</li> <li>◦ Type PT500 (385) RTD</li> </ul> </li> <li>• FLUKE TC TYPE ( Fluke TC Type ) <ul style="list-style-type: none"> <li>◦ None</li> <li>◦ Type B Thermocouple</li> <li>◦ Type C Thermocouple</li> <li>◦ Type E Thermocouple</li> <li>◦ Type J Thermocouple</li> <li>◦ Type K Thermocouple</li> <li>◦ Type L Thermocouple</li> <li>◦ Type N Thermocouple</li> <li>◦ Type R Thermocouple</li> <li>◦ Type S Thermocouple</li> <li>◦ Type T Thermocouple</li> <li>◦ Type U Thermocouple</li> </ul> </li> </ul> <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"> <li>• Development</li> <li>• Approved</li> <li>• Obsolete</li> </ul> <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 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"> <li>Specified Maximum Dead Band Switch 1</li> <li>Specified Minimum Dead Band Switch 1</li> <li>Specified Minimum Dead Band Switch 2</li> <li>Specified Maximum Dead Band Switch 2</li> </ul> <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 APM system to include the dead band range values in the pass/fail validation process. When this check box is cleared, the 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 <a href="#">type of template that you selected on the Profile Template page</a> , this field is populated with one of the following values: <ul style="list-style-type: none"> <li>If you selected <b>FLUKE 74X</b> on the <b>Profile Templates</b> page, then the Calibration Type field contains the value FLUKE 74X.</li> <li>If you selected <b>Manual</b> on the <b>Profile Templates</b> page, then the Calibration Type field contains the value Functional - Manual.</li> </ul>
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"> <li>• Development</li> <li>• Approved</li> <li>• Obsolete</li> </ul> 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 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.

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.
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 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 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.

Field	Data Type	Description	Behavior and Usage
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.	<p>This list contains the following values:</p> <ul style="list-style-type: none"> <li>• Development</li> <li>• Approved</li> <li>• Obsolete</li> </ul> <p>The default value is Development.</p>

## 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 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"> <li>• 2 Up</li> <li>• 2 Down</li> <li>• 2 Up then 2 Down</li> <li>• 3 Up</li> <li>• 3 Down</li> <li>• 3 Up then 3 Down</li> <li>• 5 Up</li> <li>• 5 Down</li> <li>• 5 Up then 5 Down</li> <li>• 5 Up then 1 Down</li> <li>• 11 Up</li> <li>• 11 Down</li> <li>• 11 Up then 11 Down</li> </ul> <p>Depending on the selection on the <a href="#">Calibration Template Detail, Analyzer record</a>, the following fields are populated by default:</p> <ul style="list-style-type: none"> <li>• Calibration Template Detail ID</li> <li>• Input Up/Dn</li> <li>• Percent of Scale Sequence Number</li> <li>• Percent of Scale Test Point</li> </ul> <p>After you save the template, you cannot modify this field.</p>



Field	Data Type	Description	Behavior and Usage
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.
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"> <li>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.</li> <li>If the Error Assessment field in the Calibration Setup Defaults record contains the value Percent of Range, this field is disabled and blank.</li> </ul> <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"> <li><b>Percent of Range:</b> When you select this value, the Max Error Limit field is enabled, and the Engineering Units Error Limit field is disabled.</li> <li><b>Engineering Units:</b> When you select this value, the Engineering Units Error Limit field is enabled, and the Max Error Limit field is disabled.</li> </ul> <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"> <li>• Current</li> <li>• Resistance</li> <li>• Voltage</li> <li>• Pulse</li> <li>• Other</li> <li>• HART</li> </ul> <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"> <li>• If the Error Assessment field in the Calibration Setup Defaults record contains the value Engineering Units, this field is disabled and blank.</li> <li>• 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.</li> </ul> <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"> <li>• Current</li> <li>• Resistance</li> <li>• Pulse</li> <li>• Voltage</li> <li>• Other</li> <li>• HART</li> </ul> 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 <b>Primary Input Details</b> section: <ul style="list-style-type: none"> <li>• Primary Input URV</li> <li>• Primary Input Range Units</li> </ul> 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 <b>Primary Input Details</b> section:</p> <ul style="list-style-type: none"> <li>• Primary Input LRV</li> <li>• Primary Input URV</li> </ul> <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 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 <b>Primary Input Details</b> section:</p> <ul style="list-style-type: none"> <li>• Primary Input LRV</li> <li>• Primary Input Range Units</li> </ul> <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 <b>Primary Output Details</b> section:</p> <ul style="list-style-type: none"> <li>• Primary Output URV</li> <li>• Primary Output Range Units</li> </ul> <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 <b>Primary Output Range</b> section:</p> <ul style="list-style-type: none"> <li>• Primary Output LRV</li> <li>• Primary Output URV</li> </ul> <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 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 <b>Primary Output Details</b> section:</p> <ul style="list-style-type: none"> <li>• Primary Output LRV</li> <li>• Primary Output Range Units</li> </ul> <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 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"> <li>• Development</li> <li>• Approved</li> <li>• Obsolete</li> </ul> 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 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"> <li>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.</li> <li>If the Error Assessment field in the Calibration Setup Defaults record contains the value Percent of Range, this field is disabled and blank.</li> </ul> <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"> <li><b>Percent of Range:</b> When you select this value, the Max Error Limit field is enabled, and the Engineering Units Error Limit field is disabled.</li> <li><b>Engineering Units:</b> When you select this value, the Engineering Units Error Limit field is enabled, and the Max Error Limit field is disabled.</li> </ul> <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"> <li>• Weight</li> <li>• Voltage</li> <li>• Current</li> <li>• Other</li> </ul> <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>

Field	Data Type	Description	Behavior and Usage
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"> <li>• If the Error Assessment field in the Calibration Setup Defaults record contains the value Engineering Units, this field is disabled and blank.</li> <li>• 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.</li> </ul> <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>
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 Type	Character	The output 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 output types:</p> <ul style="list-style-type: none"> <li>• Pressure</li> <li>• Temperature</li> <li>• Flow</li> <li>• Level</li> <li>• Weight</li> <li>• Voltage</li> <li>• Current</li> <li>• Frequency</li> <li>• Resistance</li> <li>• Other</li> </ul> <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 is grouped with the following other fields in the <b>Primary Input Details</b> section:</p> <ul style="list-style-type: none"> <li>• Primary Input URV</li> <li>• Primary Input Range Units</li> </ul> <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>

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 <b>Primary Input Details</b> section:</p> <ul style="list-style-type: none"> <li>• Primary Input LRV</li> <li>• Primary Input URV</li> </ul> <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 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 <b>Primary Input Details</b> section:</p> <ul style="list-style-type: none"> <li>• Primary Input LRV</li> <li>• Primary Input Range Units</li> </ul> <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 <b>Primary Output Details</b> section:</p> <ul style="list-style-type: none"> <li>• Primary Output URV</li> <li>• Primary Output Range Units</li> </ul> <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 <b>Primary Output Details</b> section:</p> <ul style="list-style-type: none"> <li>• Primary Output LRV</li> <li>• Primary Output URV</li> </ul> <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 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 <b>Primary Output Details</b> section:</p> <ul style="list-style-type: none"> <li>• Primary Output LRV</li> <li>• Primary Output Range Units</li> </ul> <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 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"> <li>• Development</li> <li>• Approved</li> <li>• Obsolete</li> </ul> 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"> <li>• Facility Shutdown (FACILITY SHUTDOWN)</li> <li>• Facility Slowdown (FACILITY SLOWDOWN)</li> <li>• Unit Shutdown (UNIT SHUTDOWN)</li> <li>• Unit Slowdown (UNIT SLOWDOWN)</li> <li>• System Shutdown (SYSTEM SHUTDOWN)</li> <li>• System Slowdown (SYSTEM SLOWDOWN)</li> </ul>
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.



Field	Data Type	Description	Behavior and Usage
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.
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 <b>Alert Assignee When Due</b> 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"> <li>• Never</li> <li>• Daily</li> <li>• Weekly</li> <li>• Monthly</li> <li>• Yearly</li> </ul> This field appears in the Alert datasheet. This field is required when the <b>Alert Assignee When Due</b> check box is selected.

Field	Data Type	Description	Behavior and Usage
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.
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 <b>Reevaluate?</b> check box is selected.

Field	Data Type	Description	Behavior and Usage
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 <b>Reevaluate?</b> 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 <b>Reevaluate?</b> 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.
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"> <li>• High (HIGH)</li> <li>• Medium (MEDIUM)</li> <li>• Low (LOW)</li> </ul>
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"> <li>• On-line (ON-LINE)</li> <li>• Off-line (OFF-LINE)</li> <li>• Not Applicable (N/A)</li> </ul>
Reviewer Name	Character	The name of the user who will review the Recommendation.	You can select a user from the list.

Field	Data Type	Description	Behavior and Usage
Status	Character	The status of the Recommendation.	This field contains a list of the following states: <ul style="list-style-type: none"> <li>• Created</li> <li>• Pending Review</li> <li>• Reviewed</li> <li>• Rejected</li> <li>• Cancelled</li> <li>• Superseded</li> </ul>
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.
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"> <li>Requested = 60 ppm</li> <li>Tolerance = 1 ppm</li> </ul> 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.
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.

Field	Data Type	Description	Behavior and Usage
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.
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.

Field	Data Type	Description	Behavior and Usage
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.



<b>Field</b>	<b>Data Type</b>	<b>Description</b>	<b>Behavior and Usage</b>
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.
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.

Field	Data Type	Description	Behavior and Usage
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"> <li>• Minutes</li> <li>• Hours</li> <li>• Days</li> <li>• Weeks</li> <li>• Months</li> <li>• Years</li> </ul> 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.
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"> <li>• Minutes</li> <li>• Hours</li> <li>• Days</li> <li>• Weeks</li> <li>• Months</li> <li>• Years</li> </ul> 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.

<b>Field</b>	<b>Data Type</b>	<b>Description</b>	<b>Behavior and Usage</b>
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.
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.

Field	Data Type	Description	Behavior and Usage
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 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.

Field	Data Type	Description	Behavior and Usage
Instrumentation System Type	Character	Instrumentation System Type	<p>This field is used to differentiate SIS Instrumented System and Calibration Instrumentation System.</p> <p>This field is not present on the datasheet and is set with a default value:</p> <ul style="list-style-type: none"> <li>• Calibration: When record is created for Calibration Management module.</li> <li>• SIS: When record is created for SIS Management module.</li> </ul>
SIL Analysis ID	Character	SIL Analysis ID	<p>This field displays the ID of the SIL Analysis linked to the Instrumentation System. This field is disabled after the record is saved.</p> <p><b>Note:</b> This field is applicable only for SIS Management module.</p>
SIL Analysis Key	Character	SIL Analysis Key	<p>This field stores the SIL Analysis key linked to the Instrumentation System.</p> <p><b>Note:</b> This field is applicable only for SIS Management module.</p>

## 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 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.

Field	Data Type	Description	Behavior and Usage
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 <b>Overall AF Pass/Fail</b> for all the child events is set to PASS.  This field is set to FAIL if the <b>Overall AF Pass/Fail</b> 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 <b>Overall AL Pass/Fail</b> for all child events is set to PASS.  This field is set to FAIL if the <b>Overall AL Pass/Fail</b> 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

Field	Data Type	Description	Behavior and Usage
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.

Graph Name	Behavior and Usage
Analyzer SingleComponent Calibration Measure Graph	<p>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.</p>
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"> <li>• 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"> <li>◦ Last 1 month</li> <li>◦ Last 3 months</li> <li>◦ Last 1 year</li> <li>◦ Last 3 years</li> <li>◦ All</li> </ul> </li> <li>• 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"> <li>◦ MI_EVCAANLG: The Calibration, Analog family caption.</li> <li>◦ MI_EVCAANMC: The Calibration, Analyzer Multi-Component family caption.</li> <li>◦ MI_EVCAANSC: The Calibration, Analyzer Single Component family caption.</li> </ul> </li> <li>• EventPred: Lets you specify the Entity Key for the Asset record to which Calibration Event records are linked.</li> </ul>

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"> <li>• 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"> <li>◦ Last 1 month</li> <li>◦ Last 3 months</li> <li>◦ Last 1 year</li> <li>◦ Last 3 years</li> <li>◦ All</li> </ul> </li> <li>• 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"> <li>◦ MI_EVCAANLG: The Calibration, Analog family caption.</li> <li>◦ MI_EVCAANMC: The Calibration, Analyzer Multi-Component family caption.</li> <li>◦ MI_EVCAANSC: The Calibration, Analyzer Single Component family caption.</li> </ul> </li> <li>• EventPred: Lets you specify the Entity Key for the Asset record to which Calibration Event records are linked.</li> </ul>
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.
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.

Item Name	Behavior and Usage
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.
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 <b>Calibration Admin Preferences</b> page.
CalibrationMappingList	Returns the list of mappings on the <b>Calibration Admin Preferences</b> page for the specified device driver key.
CalibrationStrategyList	Returns the list of calibration strategies on the <b>Calibration Admin Preferences</b> page.
CalibTemDfltsList	Returns the list of template defaults on the <b>Calibration Admin Preferences</b> page for the specified device type.
Device Mapping Query	Returns the list of mappings between the Calibration fields defined in 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.

Item Name	Behavior and Usage
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.
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.



Item Name	Behavior and Usage
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.
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.

Item Name	Behavior and Usage
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.

The Catalog folder `Public\Meridium\Modules\Calibration Management\AdvViz\Reports` contains the similar reports as listed below, where the reports have been redesigned using Advanced Visualization tool. These reports can be used as calibration family default reports in place of existing SSRS reports.

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.

<b>Report Name</b>	<b>Behavior and Usage</b>
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 generatedAnalyzer 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.
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.

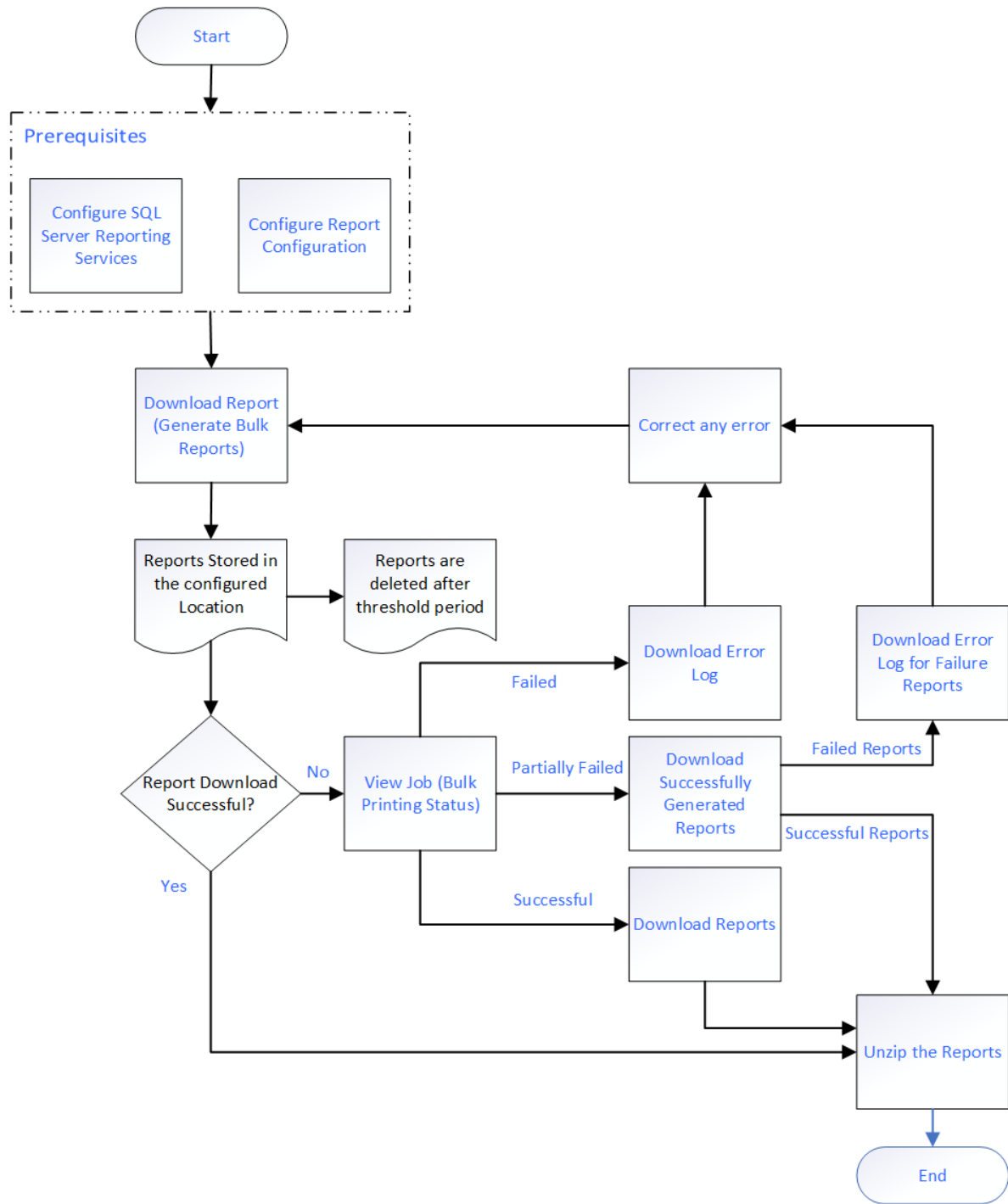
<b>Report Name</b>	<b>Behavior and Usage</b>
Functional Test Calibration Report	Displays the EventKey prompt for the Entity Key of the Calibration, Functional Test record and then displays the generated Functional Test Calibration Report details for the specified Calibration Event.
Functional Test Calibration 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.