

maximo[®]

Release 2.0, Patch 02
September 2005

Maximo Calibration Release Notes

mro software™

make it *all* count

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About This Guide

This section briefly summarizes this document and how it can help you as a Maximo® user. It also provides information on other MRO Software resources available to you, such as additional documentation and support.

Why Read This Guide?

The guide provides instructions for applying Maximo Calibration Release 2.0 Patch 02. It also includes important information about steps you need to complete both before and after applying the patch.

Who Should Read This Guide?

Anyone planning to apply Maximo Calibration Release 2.0 Patch 02 should read this guide. Applying Maximo Calibration Release 2.0 Patch 02 requires system administrator rights and privileges.

How to Use This Guide

Read this guide in its entirety prior to applying Maximo Calibration Release 2.0 Patch 02. This guide includes important information about steps you need to complete both before and after applying the p

Chapter Contents

The following table briefly describes each chapter in this document. Read the chapters in the order they appear and perform the tasks in sequence as written.

Chapter Name	Chapter Contents
About this Guide	This section briefly summarizes this document and how it can help you as a Maximo user.
Applying Maximo Calibration Release 2.0 Patch 02	Describes how to apply Maximo Calibration Release 2.0 Patch 02.

Related Documentation

You can find more information regarding *Maximo Calibration* in the following documents:.

Document	Description
<i>Maximo System Administrator's Guide</i>	The guide provides information on setting up and configuring Maximo, including managing the Application Server.
<i>User's Guide—Calibration Addendum</i>	The guide provides information on the calibration specific features of Maximo.

Support

MRO Software, Inc. customers with an active and valid Annual Customer Support Plan (ACSP) maintenance agreement can obtain technical information, including product updates, on the MRO Software Support Online website at <http://support.mro.com>.

Support Online includes technical information on MRO Software products, software downloads and documentation updates. Each product release has a specific Version page that includes specific information on that version including the latest update and documentation availability.

Applying Maximo Calibration 2.0 Patch 02

This chapter describes how to apply Maximo Calibration 2.0 Patch 02.

Prerequisites

You must install this patch on a system where you have already installed:

- ▼ Maximo 5.2 Patch 03 or higher
- ▼ Maximo Calibration 2.0 Patch 01

Update Process

Applying Maximo Calibration 2.0 Patch 02 is a two-part process:

- ▼ Applying the patch
- ▼ Updating the database

Checklist

This checklist provides an overview of the process you should follow to apply Maximo Calibration 2.0 Patch 02. You will find detailed instructions later in this chapter.

-
- | | | |
|-----|---|--|
| [] | 1 | Backup your Maximo Calibration folder and database |
| [] | 2 | Stop the Maximo application server(s)/service(s). |
| [] | 3 | Download the installation executable. |
| [] | 4 | Run the executable to apply the patch |
| [] | 5 | Run the database scripts |
| [] | 6 | Re-build and Deploy the EAR files. |
-

Detailed Process

You can obtain the Maximo Calibration 2.0 Patch 02 software from the Calibration main page on the MRO Software Support Online website.

Applying the Patch

To apply Patch 02, follow these steps:

- 1 Make a backup of your local Maximo Calibration folder and database.
- 2 Shut down your Maximo instance.
- 3 Download the appropriate installation executable, based on your system's platform.
- 4 Run the installation executable. If you have not installed Calibration 2.0, you will get an error message saying the Maximo Calibration Release 2.0 was not found.
- 5 Follow the on-screen instructions to apply the patch.

Running the Database Scripts

The database scripts create and update the database tables necessary for this patch.

To run the database scripts, follow these steps:

- 1 Back up your database, if you have not already done so.
- 2 Connect to the database as the Maximo schema owner (for example: Maximo).
- 3 Run the appropriate database script to create and update the tables:
 - ▼ For Oracle:
<MAXIMO dir>/database/indsol/calibration/oracle/calib2_p02.ora
 - ▼ For SQL Server
<MAXIMO dir>/database/indsol/calibration/sqlserver/
calib2_p02.sql

Post Installation

When you have completed the patch application, you must manually build and deploy the EAR files.

Issues Addressed

This chapter lists the issues corrected in this patch.

Removal of Significant Digit Math on Data Sheet

In the Data Sheet application, a user defines minimum field resolutions for both Input and Output. Based on this minimum field resolution and the formulas for the different tolerances significant digit math is applied. However, it appears that doing so overstates the accuracy of these tolerances on the Data Sheets. The Data Sheet should be based on an ideal tolerance level not the actual tolerance level.

The issue of using significant digit math becomes clear when using the following example:

Min Field Resolution	Input	Output	Tolerance 1
2	0.00 to 1.00 psi	4.00 to 20.00 mA	+/- 2 %SPAN

Significant Digit Math %SPAN

Nominal Input	Desired Output	Tolerance From	Tolerance To
0.00	4.00	3.7	4.3
0.25	8.00	7.7	8.3
0.50	12.00	11.7	12.3
0.75	16.00	16.	16.
1.00	20.00	20.	20.3

Decimal Point Math %SPAN

Nominal Input	Desired Output	Tolerance From	Tolerance To
0.00	4.00	3.68	4.32
0.25	8.00	7.68	8.32
0.50	12.00	11.68	12.32
0.75	16.00	15.68	16.32
1.00	20.00	19.68	20.32

By comparing the two ways of calculating the tolerance the Significant Digit Math is limiting the tolerance range that is acceptable for the instrument. The

differences between the two calculations are substantial when your Nominal Input is greater than 0.65.

Detailed Specification

All fields will remain the same however the math of deriving the Tolerance Levels will change.

There will no longer be Significant Digit Math applied to the Tolerance formulas. The minimum resolution fields will determine how many decimal places are present in the Tolerance ranges.

The Tolerance Limits will be based on the Min Field Resolution of the Output.

Tolerance Errors will be based on the Min Field Resolution of the Output.

Asset Error will be based on the Min Field Resolution of the Output.

Process Error will be based on the Units specified on the Data Sheet. If Process Units coincide with Input Units then the Min Field Resolution of the Input is used else Output for all other variables.

Decimal Numbers

Decimal numbers, such as 3.762 are used in situations which call for more precision than whole numbers provide.

As with whole numbers, a digit in a decimal number has a value which depends on the place of the digit. The places to the left of the decimal point are ones, tens, hundreds, and so on, just as with whole numbers. This table shows the decimal place value for various positions:

NOTE Adding extra zeros to the right of the last decimal digit does not change the value of the decimal number.

<u>Place (underlined)</u>	Name of Position
1. <u>2</u> 34567	Ones (units) position
1. <u>3</u> 4567	Tenths
1. <u>34</u> 567	Hundredths
1. <u>345</u> 67	Thousandths
1. <u>3456</u> 7	Ten thousandths
1. <u>34567</u>	Hundred Thousandths
1. <u>34567</u>	Millionths

Example 1:

In the number 3.762, the 3 is in the ones place, the 7 is in the tenths place, the 6 is in the hundredths place, and the 2 is in the thousandths place.

Example 2:

The number 14.504 is equal to 14.50400, since adding extra zeros to the right of a decimal number does not change its value.

The Min Field Resolution will determine the decimal value of a number. If 0 or null is specified then the number becomes a whole number.

When Min Field Resolutions are different between the Input and Output number, Output Min Field Resolution takes precedent.

Example 3:

If Input has a min field resolution of 2 and Output has a min field resolution of 4 the calculations to determine the number of decimal places is as follows:

Addition	1.04 + 20.1234 = 21.1634
Subtraction	1.04 - 20.1234 = -19.0834
Multiplication	1.04 * 20.1234 = 20.9283
Division	1.04 / 20.1234 = 0.0696

If Input has a min field resolution of 4 and Output has a min field resolution of 2 the calculations to determine the number of decimal places is as follows:

Addition	1.0434 + 20.12 = 21.16
Subtraction	1.0434 - 20.12 = -19.08
Multiplication	1.0434 * 20.12 = 20.99
Division	1.0434 / 20.12 = 0.05

Rounding

During Formula calculations no rounding takes place. Rounding occurs once the end result has been calculated. Only round to meet the Min Field Resolutions specified. Pad with zeros if need be to meet the min field resolution.

To round a number to any decimal place value, we want to find the number with zeros in all of the lower places that is closest in value to the original number. As with whole numbers, we look at the digit to the right of the place we wish to round to. Note: When the digit 5, 6, 7, 8, or 9 appears in the ones place, round up; when the digit 0, 1, 2, 3, or 4 appears in the ones place, round down.

Examples:

- ▼ If min field resolution of 1 is specified then rounding 1.19 to the nearest tenth gives 1.2.
- ▼ If min field resolution of 2 is specified then rounding 1.545 to the nearest hundredth gives 1.55.
- ▼ If min field resolution of 3 is specified then rounding 0.1024 to the nearest thousandth gives 0.102.
- ▼ If min field resolution of 0 or null is specified then rounding 1.80 to the nearest one gives 2.

Inverse Calculations

Calibration 5.2 allows increasing ranges of Input and Output like 0 -100% or 4- 20mA.

Input and Output ranges that decrease like 100 - 0% or 20 -4mA cause an error when entering in the Calibration Points when evaluating the tightest to widest rules.

This issue is fixed to allow Input and Output ranges that decrease.

Status History Page User is Always the Creator

When a Data Sheet is created and passed through work flow for approval the user in the Status History page of the Data Sheet is always the original creator of the Data Sheet.

This issue is fixed to reflect all users that update the statuses to the Data Sheet.

Refetch and Try Again Error on Data Sheets

The Refetch and Try again error appears when the input range is negative and these values are changed after being saved.

This issue is fixed to allow changes to negative numbers in the Input/Output ranges.

