

FLEXMOTION™ VI LIBRARY VERSION 4.0

FlexMotion VI Library 4.0 is the motion control VI library for interfacing with all National Instruments FlexMotion series motion control boards in the LabVIEW and BridgeVIEW programming environments. The FlexMotion VI Library is compatible with LabVIEW version 4.0.1 or later and BridgeVIEW version 1.1 or later.

These release notes discuss compatibility issues, describe how to install your FlexMotion VI Library, and briefly summarize changes and improvements associated with this version.

Compatibility Issues

The FlexMotion VI Library 4.0 is backward compatible with version 1.2 of FlexMotion VIs. Existing VIs should continue to work.

**Note**

In order for the FlexMotion VI Library 4.0 to work, you must update the firmware.

See the *Updating Firmware* section of the *FlexMotion Software 4.0 Release Notes* on how to update the FlexMotion boards firmware.

With your firmware updated there are two changes that could affect your existing programs.

- If your existing program enabled stepper axes, the PID update rate set in Enable Axes may need to change. See the Enable Axes VI in the *FlexMotion VI Online Help* for more information.
- It is no longer legal to change the PID update rate on the fly. Axes must be disabled and re-enabled to change the PID update rate using the Enable Axes VI.

VIs that were created with an older version of the FlexMotion VI Library are still supported. However, some of the VIs are only supported through compatibility libraries. For example, a program developed in the past that used the Load Proportional Gain VI, will still work; however, new programs that you develop should use the Load Single PID Parameter VI to

accomplish this instead. You should not use any of the functions in the `_compat.lib` VI library in new programs that you develop.

The FlexMotion VI Library is compiled in version 4.1.1 of LabVIEW and will work with versions 4.0.1 and later.

VI Library Installation

Before you can use the FlexMotion 4.0 VIs, you need to install FlexMotion Software version 4.0 or later. Refer to the *FlexMotion Software Version 4.0 Release Notes* for software installation instructions. Complete the FlexMotion software installation before installing the FlexMotion VI Library.

Complete the following steps to install your FlexMotion VI library:

For Windows NT/98/95

1. Insert the FlexMotion VI Library CD into your CD-ROM drive.
2. Follow the installer prompts through the rest of the installation.
3. Refer to the *ReadMe.txt* file after the installation is complete for version numbers of individual motion control software components.

For Windows 3.1

1. Insert the FlexMotion VI Library CD into your CD-ROM drive.
2. Choose **File>Run**.
3. Type `d:\setup16.exe` (if your CD-ROM is not drive D, type the appropriate letter).
4. Choose **OK**.
5. Follow the installer prompts through the rest of the installation procedure. Enter your LabVIEW serial number you received with your FlexMotion VIs when prompted.



Note

To obtain 3.5 in. diskettes for FlexMotion VI Library 4.0, contact National Instruments and request part number 777912-01. (Refer to the Customer Communication section of either the FlexMotion Hardware User Manual or the FlexMotion Software Reference Manual for contact information.)

Summary of Changes and Improvements

There are several changes and improvements to the FlexMotion VI Library that make it easier to use and expands its functionality. However, code that you have created and validated in the past will still operate with the new VI library. A broad description of changes made in version 4.0 follows.

Documentation Improved

The FlexMotion VI Online Help now includes sections dedicated to the discussion of axis and resource configuration and initialization and other advanced topics. Each VI includes a complete explanation of what the VI does, how to select input parameters, and how the VI interacts with other motion control commands (with cross references). The *FlexMotion VI Online Help* includes a hierarchical linked structure and a searchable format for quickly finding the information related to particular VIs.

Palette Set Reorganized

The new FlexMotion palette set has grouped functions so that they are easier to find. More common functions have been moved to higher level palettes and less common functions have been placed on advanced level function subpalettes. Several commands have been added to simplify operations on multiple axes. For example, one VI can now read the current position on all axes in a 2-axis or 3-axis vector space. As another example, you can call a single VI to load any of the eight PID control parameters.

Expanded Example Set

More than a dozen examples have been added to demonstrate 1-axis, 2-axis, and 3-axis motion, gearing, high-speed capture, and curvilinear motion. Where appropriate, these examples implement position monitoring, error handling, and use the new vector space functions.



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