



## PowerFlex 700 Drive w/Vector Control Option (Revision 6.004)

These release notes correspond to minor revision 6.004 of firmware for PowerFlex 700 Drive with the Vector Control option. Refer to publications 20B-RN001 through 20B-RN009 for a complete description of the changes implemented in previous firmware versions.

### Corrected Anomalies

This section describes the anomalies corrected in this revision.

Function	Anomaly	Correction
Power Down Routine	<p>The power down routine for the drive may cause a checksum error. When a checksum error occurs, the power down data parameters are reset to default values.</p> <p>Parameter [61 Autotune] is reset to “3, Calculate” which may result in detuning the drive (to the point where it may not produce sufficient torque) and forcing the drive into “Assisted Start Up” mode. This may prevent the drive from running until it is taken out of this mode.</p> <p>In firmware versions 6.00-6.003, the occurrence of F112, Power Down Csum (Power Down Check Sum) fault indicates the drive experienced a checksum error.</p>	<p>The firmware power down routine was modified to resolve the issue.</p>
DPI Reference Scaling	<p>The drive sends the incorrect DPI reference scaling value when [298 DPI Ref Sel] = “1, Max Speed.” The drive incorrectly uses [55 Maximum Freq] as the DPI Reference “Base.”</p> <p>The drive correctly changes its scaling of DPI reference internal units to engineering units, but sends incorrect scaling information (reference base) to any HIM, DriveExplorer, or DriveExecutive. Thus, the drive correctly scales an incoming speed reference, but any HIM, etc. will send an incorrect speed reference because it is using incorrect scale information.</p>	<p>When [298 DPI Ref Sel] = [1, Max Speed], the drive will use [82 Maximum Speed] as the DPI reference base and the scaling information will be correct.</p>
HIM Status Text for PowerFlex 700L with Active Converter	<p>If an active converter is used, but is “not ready,” it powers down the DC bus and the drive sends “In Precharge” status text to any attached HIM.</p>	<p>The drive will now send “Cnvtr NotRdy” when a PF700L with an active converter is used.</p>
Power loss mode for PowerFlex 700L with Active Converter	<p>If the power loss mode is set to “decel” and the DC bus drops below the converter’s precharge open point during the process of a power loss, the drive will incorrectly exit the line loss state and accelerate back to the commanded speed, resulting in a rapid bus drop and an undervoltage fault.</p>	<p>If the power loss mode is set to “decel” and the DC bus drops below the converter’s precharge open point during the process of a power loss, the drive will properly transition from the line loss with ride through state to the line loss with coast state.</p>
PWM Frequency Lock (PWM FreqLock) function for PowerFlex 700L with Active Converter	<p>The PF700L active converter loses synchronization with the inverter during the IR voltage drop portions of an autotune.</p> <p>In FVC Vector without Encoder, the drive normally outputs 2 kHz PWM below 8 Hz. The reduction in PWM frequency should be inhibited by setting [Compensation] to “PWM FreqLock.” However, the firmware incorrectly uses the 2 kHz PWM frequency during the IR voltage drop portions of an autotune. This is a problem when an active converter is used with the inverter and the active converter is set to “synchronize” its PWM with the inverter PWM. The converter will lose synchronization if the converter doesn’t stay at 4 kHz.</p>	<p>The “PWM FreqLock” logic has been corrected.</p>

## Determining Firmware Revision Level

To determine the firmware version for a PowerFlex 700 Drive, view parameter 29 [Control SW Ver].

## Firmware Upgrade Procedure

This section describes procedures to flash upgrade your drive firmware. Downloads are provided on the Allen-Bradley Web Updates site located at <http://www.ab.com/support/abdrives/webupdate>. For a detailed explanation of the flash procedure, refer to <http://www.ab.com/support/abdrives/powerflex700vc/phase1/firmware/index.html>.



**ATTENTION:** Risk of drive damage exists if drive power is removed during the Boot Flash segment of the upgrade/download. To guard against damage, Do Not Remove Power to the drive until the download is complete and the drive has been reset.

**Important:** Once a flash update has been started, do not remove drive power until the download is complete and the drive has been reset. If power is removed during Boot Flash, the drive may be permanently damaged. A drive that has been damaged in this way cannot be repaired. If power is removed during Application Flash, the drive will remain in Boot and can be reflashed.

1. Remove/disconnect any HIMs before proceeding.
2. Install the “**v6.004 Flash Kit**” from the Allen-Bradley Web Updates site. This automatically installs the latest version of the ControlFLASH utility on your computer. ControlFLASH, DriveExplorer or DriveExecutive can now be used to update the drive using the following instructions.

### Using ControlFLASH

**Important:** This method requires RSLinx.

1. Launch ControlFLASH (if it is not already running).
2. Follow the screen prompts until the flash procedure is completed and the new firmware version is displayed.

### Using DriveExplorer Lite/Full

1. Exit the ControlFLASH program (if it is running) and launch DriveExplorer. Make a connection to the drive.
2. In the DriveExplorer treeview, select the appropriate drive. Then select the Information icon.
3. On the Properties screen, select the “Details” tab.
4. Select “Flash Update” and follow the screen prompts until the procedure is completed and the new firmware version is displayed.

### Using DriveExecutive

**Important:** This method requires RSLinx.

1. Exit the ControlFLASH program (if it is running) and launch DriveExecutive. Make a connection to the drive.
2. In the DriveExecutive treeview, select the appropriate drive. Then select the Information icon.
3. On the Properties screen, select “Component Details.”
4. Select “Flash Update” and follow the screen prompts until the procedure is completed and the new firmware version is displayed.

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