

Release Notes

PowerFlex® 700H Drive Firmware (Revision 3.001)

These release notes correspond to major revision 3.001 of firmware for PowerFlex® 700H Drives.

Determining Firmware Revision Level

To determine the firmware version for a PowerFlex 700H 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>.

Note: This procedure uses the PowerFlex Flash Update Tool. Control Flash and Anacanda support through the DPI are not yet available.



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.

Using the PowerFlex Flash Update Tool

Important: The PowerFlex Flash Upgrade Tool is used with a straight serial cable with male-female connectors. Do not use a crossover cable (NULL Modem) cable.

Important: Shut down RSLinx before completing this procedure in order to avoid a COMM PORT error.

The system firmware is named RPF700HAV023.vcn and is the only file required for this update. The standard application firmware is bundled with system firmware and does not require a separate download or flash.

1. Connect the serial cable to the port on the front of the 700H control assembly as shown below.



2. Follow the screen prompts until the flash procedure is completed and the new firmware version is displayed.

Enhancements

This section describes the enhancements included in this revision:

Added Ability to Disable Motor Stall Fault

Bit 2 “Motor Stall” has been added to parameter 238 [Fault Config] to allow you to disable fault 6 “Motor Stall”, which indicates when the motor is operating at high current and low frequency and is not accelerating. When bit 2 “Motor Stall” is set to 0 “Disabled”, the drive will ignore the “Motor Stall” fault. By default the drive will wait 15 seconds before the “Motor Stall” fault is indicated (bit 2 “Motor Stall” set to 1 “Enabled”).

Added Ability to Enable/Disable Dynamic Brake While Drive is Stopped

Parameter 145 [DB While Stopped] has been added to allow you to enable/disable a dynamic brake option while the drive is stopped.

Added Ability to Retain Accumulated Percentage of Motor Overload After Drive Reset or Power Cycle

Parameter 50 [Motor OL Mode] was added to allow you to enable/disable the retention of the accumulated percentage of motor overload displayed in parameter 220 [Motor OL Count]. Setting bit 1 “Pwr Cyc Ret” of [Motor OL Mode] will retain the value of [Motor OL Count] after a drive reset or power cycle. Bit 1 “Pwr Cyc Ret” is set to “0” (disabled) by default.

Added Ability to Reverse Phase Rotation of Applied Voltage in Drive

Bit 5 “Mtr Lead Rev” has been added to parameter 56 [Compensation] to allow you to reverse the phase rotation of the applied voltage, effectively reversing the motor leads without physically doing so.

Added Ability to Trim Speed Reference Based on Percentage

Bit 2 “Add or %” has been added to parameter 118 [Trim Out Select] to allow you to trim the speed reference based on a percentage or the frequency of the input signal. When bit 2 “Add or %” is set (= “1”), the selected speed reference will be trimmed based on the percent value set in the new parameter 116 [Trim % Setpoint].

Added Gain Factor Parameter for PI Output

Parameter 464 [PI Output Gain] has been added to allow you to set a gain factor for the Process PI output (displayed in parameter 138 [PI Output Meter]).

Added PI Output Ratio Scale Bit to PI Configuration

Bit 9 “% of Ref” has been added to parameter 124 [PI Configuration] to scale the output of the Process PI in trim mode to improve resolution. Setting bit 9 “% of Ref” of [PI Configuration] scales the Process PI output to the reference, rather than to parameter 55 [Maximum Freq].

Added “Run Level” and “Run w Comm” Options to Digital Inputs

Options 43 “Run Level” and 46 “Run w Comm” were added to the digital inputs to allow you to select programming that allows the drive to start without needing to transition a “Run” command after the following conditions are satisfied in the drive:

- **Use with Enable** - With a digital input programmed as “Enable” and another as either of the new “Run Level” or “Run w Comm” options, the drive can be started by transitioning the “Run” input and will continue to run as long as both the “Enable” and “Run” inputs are asserted. When the “Enable” input is removed, the drive “disconnects” from the motor and the motor coasts. When the “Enable” input is asserted again and the “Run Level” input still asserted the drive will run without the need to transition the “Run” input.

- **Use with Fault** - With a digital input programmed as either of the new “Run Level” or “Run w Comm” options, the drive can be started by transitioning the “Run” input. If the drive faults, the drive “disconnects” from the motor and the motor coasts. When the fault is cleared and the “Run Level” input still asserted the drive will run without the need to transition the “Run” input. If, however, a “Stop” input is used to reset faults, the “Run Level” input must be transitioned.

Added “Shear Pin Time” Feature to Current Limit Function

Parameter 189 [Shear Pin Time] has been added to provide a user-definable time that must elapse before the drive faults when the drive is at or above the current limit set in parameter 148 [Current Lmt Val]. Also, setting the new bit 11 “Shear PNO Ac”, in parameter 238 [Fault Config], will prevent the “Shear Pin” fault (63) while the drive is accelerating. Setting the existing bit 4 “Shear Pin” of parameter 238 [Fault Config] enables the basic Shear Pin feature (i.e., the drive may fault while accelerating). When bit 4 or 11 is enabled, if the current is still at or above the current limit set in [Current Lmt Val] for the amount of time set in [Shear Pin Time], the drive will fault and display fault code 63 “Shear Pin” on the HIM.

Changed Minimum Value for Analog Inputs and Outputs

The minimum value for the analog inputs and outputs has been changed from 4.000mA to 0.000mA. The minimum value for the analog inputs is set in parameters 322 [Analog In 1 Hi], 323 [Analog In 1 Lo], 325 [Analog In 2 Hi], and 326 [Analog In 2 Lo]. The minimum value for the analog outputs is set in parameters 343 [Analog Out1 Hi], 344 [Analog Out1 Lo], 346 [Analog Out2 Hi] and 347 [Analog Out2 Lo].

Corrected Anomalies

This section describes the anomalies corrected in this revision.

Function	Anomaly	Correction
Digital Outputs	When linked to a datalink parameter, bits 0 and 1 of parameter 379 [Dig Out Setpt] cannot be reset unless bit 2 is toggled from “0” to “1”.	The firmware has been modified to recognize when bits 0 and 1 are reset to “0” without having to set bit 2 to “1”.
Digital Outputs	When a [Digital Outx Sel] parameter was set to option 12 “At Torque”, the output did not turn on at the correct level.	All current levels for the digital outputs are scaled by a factor of 10. The firmware was changed to not scale the digital outputs when set to “At Torque”. The hysteresis is now set to 2% of rated current.

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