



PowerFlex 4[®] Custom Firmware

“DA” Option – 300 Hz Maximum Frequency and Quick Stop (EBM)

Overview

The purpose of this insert instructions manual is to provide the special information about the custom firmware.

This custom firmware option adds support for the maximal output frequency [Drive Speed] up to 300 Hz, and quick stop DC braking function.



ATTENTION: The Custom Firmware supplied is designed for a specific application and load condition. It differs from the standard PowerFlex4 product offering and must be installed and run only under this custom application. Attempting to run this Custom Firmware under any other type of application, could result in unpredictable and/or hazardous conditions.



ATTENTION: The drive contains ESD (Electrostatic Discharge) sensitive parts and assemblies. Static control precautions are required when installing, testing, servicing, or repairing this assembly. Component damage may result if ESD control procedures are not followed. If you are not familiar with static control procedures, reference A-B publication 8000-4.5.2. “Guarding Against Electrostatic Damage”

About Parameters

Compared to the standard firmware, the custom firmware has added the following new parameters, changed the following standard parameters. During configuration and parameters programming, it should pay attention.

P032 [Motor NP Hertz]

Values	Default	60 Hz
	Min/Max:	10/300 Hz
	Display:	1 Hz

P034 [Minimum Freq]

Values	Default	0.0 Hz
	Min/Max:	0.0/300.0 Hz
	Display:	0.1 Hz

P035 [Maximum Freq]

Values	Default	60 Hz
	Min/Max:	0/300.0 Hz
	Display:	1 Hz

A069 [Internal Freq]

Values	Default	60.0 Hz
	Min/Max:	0.0/300.0 Hz
	Display:	0.1 Hz

A070 [Preset Freq 0]**A071 [Preset Freq 1]****A072 [Preset Freq 2]****A073 [Preset Freq 3]**

Values	A070 Default	0.0 Hz
	A071 Default	5.0 Hz
	A072 Default	10.0 Hz
	A073 Default	20.0 Hz
	Min/Max:	0.0/300.0 Hz
	Display:	0.1 Hz

P042 [Initial Braking Pressure] – New Parameter

This is the new parameter, which affects the DC braking performance.

Values	Default	1200
	Min/Max:	80/2000
	Display:	1

Parameters Settings

The following parameters may need to be adjusted for the quick stop application.

P037 [Stop Mode]

Set this parameter to one of the DC braking modes (2, 3, 6, or 7).

Mode 3 is probably the preferred mode, but mode 2 may provide slightly better performance if there is mechanical inertial or and mechanical backlash. Mode 3 applies braking until the drive stops then releases the brake. If there is still some external mechanical inertia when the brake is released the drive (system) may coast for a short distance. Mode 2 applies the brake for the full period of time specified in parameter 80 acting as a holding brake even after the motor comes to rest. Mode 6 is the same as Mode 2 and Mode 7 is the same as Mode 3 except that Mode 6 and 7 do not permit a simple stop to clear faults if they occur.

P042 [Initial Braking Pressure]

It is adjustable from 80 (minimum initial braking pressure) to 2000 (maximum initial braking pressure). The standard software version applied minimal initial brake “pressure” to minimize “jerk”, but let drive coast an extended period before braking became effective. A larger value in the parameter increase the initial braking force. A value of 2000 during testing with standard motors may result in “cogging” and noise. 1200 to 1600 will give good performance in general, but some modification in this range may yield better operation.

P080 [DC Braking Time]

Set to 0.1 sec for testing.

This is the maximum amount of time the DC brake will be applied.

P081 [DC Braking Current]

Set to maximum for testing (1.8 time drive rated output current).

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