

Traverse Control

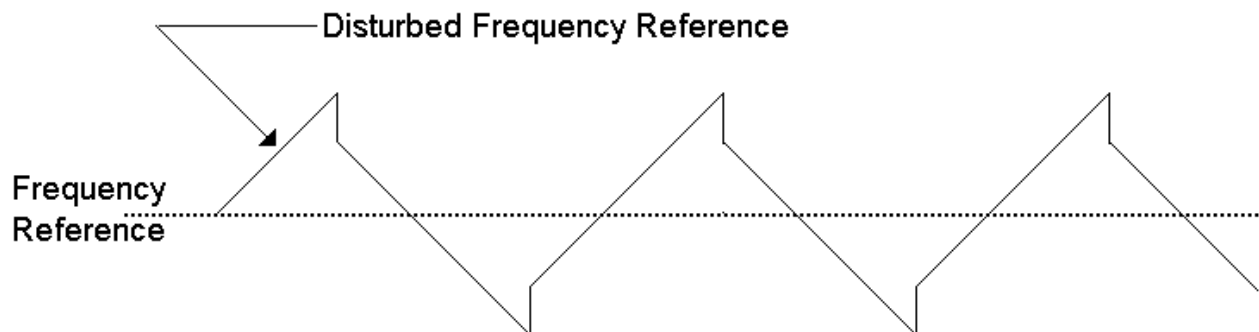
FLASH Memory Software Option
 Part Number: GPD515C-XXXX-CS006⁽¹⁾

With this factory-installed FLASH software, the GPD515 has the ability to modulate the output frequency around the set frequency reference. This function provides an evenly wound roll for those winding applications that would experience localized build-ups without this feature. The terms disturb, p-jump, ribbon break and wobblator are also used to describe this function.

Specifications:

- P-Jump Function / Inertia Compensation
- P-Jump ON/OFF Select
- P-Jump Limit
- Adjustable Duty Cycle
- Sawtooth Waveform Generation / Ribbon Break
- Percent Trim Adjustment
- Independent P-Jump Adjustment
- Independent Accel/Decel Times
- Control Mode: P-Jump in **V/f only**
- Serial Communications: DeviceNet, Profibus, Modbus Plus, Modbus RTU.

This document is an addendum to Technical Manual TM4515, listing the effect of this software on the parameters in the drive and function descriptions in the manual.



(1) XXXX refers to the base Model Number of the drive in which the software is installed.

Change	0	4/18/97
Change	1	9/19/00

1.0 Wiring

Wire the incoming power, motor, and accessories and control wiring as specified in the GPD515 Technical Manual TM4515.

2.0 I/O Definitions

2.1 New Multi-Function Digital Input Settings

For Parameters H1-01 through H1-06.

Addition to Table 5-2 Multi-Function Input Terminal Data Settings (Section 5.32)⁽²⁾

Data	Function	Description	Availability
80	Disturbed Waveform Off	Open = Disturb function enabled Closed = Disturb function disabled	V/f Only

2.2 New Multi-Function Digital Output Settings

For Parameters F5-01, F5-02 and H2-01 through H2-03.

Addition to Table 5-3 Multi-Function Output Terminal Data Settings (Section 5.33)⁽²⁾

Data	Function	Description	Availability
40	Disturb – Up Status	Closed during the accelerating period when Disturb function is enabled	V/f Only
41	During Disturb	Closed when Disturb Function is Active	V/f Only

2.3 New Multi-Function Analog Input Settings

For Parameters H3-05 and H3-09.

None.

2.4 New Multi-Function Analog Output Settings

For Parameters F4-01, F4-03, H4-01 and H4-04.

None.

⁽²⁾ GPD 515 Technical Manual TM4515

3.0 Startup Procedure

1. Perform the start-up procedure using section 2.2c of the GPD515 technical manual. This procedure will go through changing the drive into V/f control, and setting up the V/hz pattern.
2. Verify that parameter **P1-01** is set to a 1 (Enabled).
3. Adjust parameter **P1-02** to the desired amount of disturbed waveform amplitude desired. This parameter is set as a percentage of the frequency reference.
4. Adjust Parameter **P1-03** to the desired amount of disturbed waveform “jump”. This is used to compensate for the mechanical inertia of the system. This parameter is set as a percentage of parameter **P1-02**.
5. Adjust parameters **P1-04** and **P1-05** to the desired slope times.
6. Done.

4.0 Custom Software Parameters

4.1 New Program Group

Group P Traverse

4.2 New Program Function

Function P1 Traverse Param

4.3 New Program Parameters

The Traverse (Disturb) function give the drive the ability to change speed in a regular pattern from a steady frequency reference. Traverse changes the speed of the motor/winder so that the material being wound build up evenly.

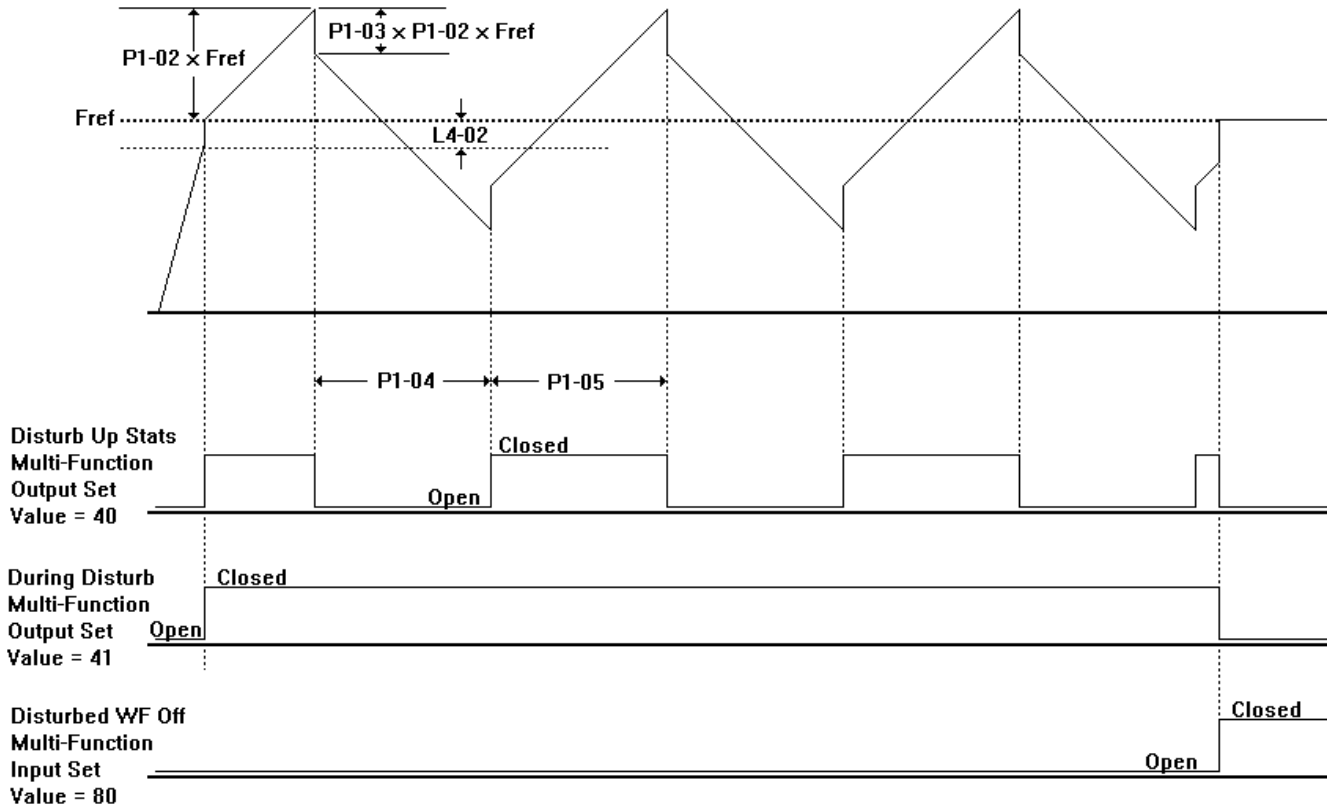


Figure 1: Disturbed Speed Reference When Using the Traverse Function

Disturb WF Sel
Enabled

P1-01 Disturb WF Sel
 Setting Range: 0 to 1
 Factory Default: 1
 Modbus Address: 0580H

Setting	Description
0	Disturbed speed reference is disabled
1	Disturbed speed reference is enabled

Disturb WF Amp P1-02= 0.0 %

P1-02 Disturb Waveform Amplitude

Setting Range: 0.0 to 20.0%
Factory Default: 0.0%
Modbus Address: 0581H

This parameter determines how much faster or slower than the set frequency reference (Fref) the actual frequency reference will be. See Figure 1.

Maximum Frequency = Fref + [P1-02 x Fref]
Minimum Frequency = Fref – [P1-02 x Fref]

Disturb WF Jmp P1-03= 0.0 %

P1-03 Disturb Waveform Jump

Setting Range: 0.0 to 50.0%
Factory Default: 0.0%
Modbus Address: 0582H

This parameter determines hoe much “jump” will occur in the frequency reference, and is used to compensate for the inertia of the mechanical system. See Figure 1.

Jump Distance = P1-03 x P1-02 x Fref

Neg Slope Time P1-04= 0.0 Sec

P1-04 Negative Slope Time

Setting Range: 0.0 to 120.0 Sec.
Factory Default: 0.0 Sec.
Modbus Address: 0583H

Pos Slope Time P1-05= 0.0 Sec

P1-05 Positive Slope Time

Setting Range: 0.0 to 120.0 Sec.
Factory Default: 0.0 Sec.
Modbus Address: 0584H

These parameters determine the rate at which the speed reference will change during the “disturb” operation. **P1-04** determines the decel time, and **P1-05** determines the accel time. NOTE: The selected accel/decel rates (**C1-01** through **C1-08**) are disabled during traverse operation. See Figure 1.

5.0 New Monitors

None.

6.0 New Alarm and Fault Codes

None.

Change	0	4/18/97
Change	1	9/19/00