

## PULSE BURST POSITIONING

Available on  
MCPV

### MODE DESCRIPTION

ClearPath will move a distance proportional to the number of pulses sent to Input B. This mode offers much of the flexibility of a “step-and-direction” system, without the need for an expensive indexer to create smooth move trajectories (that function is handled by ClearPath’s internal trajectory generator). This mode is limited to two speeds and one acceleration/deceleration rate set by the user.

**Note:** A fairly simple PLC counter or a software loop can be used to generate pulses for use with this mode.

Assert the Enable Input to energize the motor. (Note: ClearPath can be configured to perform a homing routine upon enable.) To execute positioning moves, send a high speed stream of pulses to Input B, where each pulse represents an incremental unit of distance. Total move distance is determined by the number of pulses sent to Input B.

### Pulse Positioning Pulse Burst Positioning

Signal	Function	Input Type	Example Timing
Input A	Direction Select	Logic: High=CW Low=CCW	
Input B	Pulse Input	Pulse: High-Speed Pulse Burst	
Enable Trigger	Enable Speed Select	Logic: High=Enable Low=Disable Pulse low to select alternate speed	
<p><b>Notes:</b> ClearPath requires a <b>minimum pulse width = 1µS</b>. Pulses less than &lt; 1µS will be filtered out as noise by ClearPath.</p>			

cc\_mcsd

Trigger pulse

### I/O FUNCTIONS

**Enable Input** - Asserting this input energizes the motor shaft. A short pulse (user-definable) on this input tells ClearPath to use the alternate speed limit setting for the next move.

**Input A** - This input selects the direction of rotation.

**Input B** - This input is connected to the pulse source.

**Output (HLFB)** - See HLFb section for available modes.

#### Notes:

- The frequency of the pulse train applied to Input B must always be higher than the specified speed limit(s). This ensures that the motor’s pulse buffer is never empty. See the “Burst Frequency Spec” (circled in red on the figure below) for the range of allowable pulse input frequencies.
- Sending pulses at a fixed frequency is OK; in fact, this is one of the reasons why this mode was developed. Just send a burst of

pulses and ClearPath creates a smooth motion profile for you automatically.

### MODE CONTROLS

Select number of input pulses required to rotate the motor shaft exactly one revolution.

Check to reverse direction of motor shaft rotation.

Click to adjust trigger pulse timing.

Click to open Torque Limit Setup dialog.

Click to open Homing Setup dialog.

**Input Resolution** (Pulses/Revolution): 6400

**Reverse Direction**

**Trigger Pulse** Setup...

**Torque Limit** OVR  Setup...

**Homing**  Disabled  Enabled Setup...

**Speed Limit** (RPM): 2,200

**Burst Freq Spec**  258.1 - 700 kHz

**Alt Speed Limit** (RPM): 400

**Accel** (RPM/s): 10,500

**Profile Conversion** RAS™ 66 ms Setup...

Enter max. desired motor speed.

Automatically displays allowable range of input pulse frequencies (this range is based on Input Resolution and Speed Limit settings).

Enter alternate motor speed (optional).

Enter max. desired acceleration rate.

Adjust settings for RAS™ (or optional g-Stop™) to convert standard trapezoidal move profiles into profiles that reduce noise, resonance, and vibration.

**Torque Override Indicator** When lit, the main torque limit is being overridden by a secondary, user-set torque limit (e.g., when an axis is homing, the main torque limit may be overridden by the separate homing torque limit setting).

**Hardware Input Status LEDs**  
Light = Input asserted (on)  
Dark = Input de-asserted (off)

**Inputs and Commands**

**Enable** On/Off  Alt Spd

**Input A** Dir (CW/CCW)

**Input B** Step CCW

**ServoOn Output** Servo On

**Override Inputs**

**Alt Spd**  **Jog CCW**

Check to turn on Soft Controls. Override cannot be activated when ClearPath is hardware enabled.

**Soft Inputs and LEDs** emulate hardware inputs. For use only when Soft Controls are active. **Caution: motor may spin when enabled.**

Displays HLFB output status.

**Note: Input Resolution** (see upper left of mode controls screen capture above) is defined as the number of pulses that must be sent to the motor's input (Input B in this mode) to make the shaft rotate exactly one revolution. Please see the Resolution appendix for a detailed discussion of this topic.