

MOVE TO ABSOLUTE POSITION (2-POSITION, HOME TO SWITCH)

Available on

MCVC + MCPV

MODE DESCRIPTION

Trigger ClearPath to move to one of two preset locations. This mode was designed for replacing hydraulic or pneumatic cylinders that move between two positions.

Assert the Enable Input to energize the motor. Once enabled, ClearPath automatically executes a homing move to a [user-supplied] switch or sensor wired to Input B. Once a home position is established, ClearPath automatically moves to one of the two user-defined positions (based on the state of Input A). After that, just toggle Input A to move between the two target positions.

Absolute Position

An absolute position is referenced to an established “home” position. Your target positions, in this context, are defined in terms of *distance from the home position*. For example, Position 1 could be defined as 5200 encoder counts from home, while Position 2 might be defined as 2000 encoder counts from home.

Position Control Absolute Position (2-Position Programmable)

Signal	Function	Input Type	Example Timing
Input A	Position Select	Logic: High=Pos. 2 Low=Pos. 1	
Input B	Home Switch	Logic: High=Home Low= Not Home	
Enable	Enable	Logic: High=Enable Low=Disable	
Trigger	NA	NA	
Notes: ClearPath must home to a switch upon enable to establish the Home (zero) position to which the other target positions are referenced.			<p><i>Motor position vs. time</i></p>

I/O FUNCTIONS

Enable Input - Asserting this input energizes the motor shaft.

Input A - This input selects one of two user-defined positions to which the motor should move.

Input B - This input is connected to the home switch. Its function is defined in the homing setup dialog.

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

Notes:

- If the state of Input A is changed during a move, ClearPath will immediately ramp to a stop and move to the newly indicated position.

- The user-defined positions can be 'taught' instead of entered numerically through MSP. To do this, the motor must be in a Logic Backup Power (LBP) state (using a ClearPath POWER4-HUB board). The main bus power must be off. **To teach a position**, deassert the Enable input with the motor in the position you want to teach (or deassert the Enable and then move the axis by hand to the desired spot). Set input A to the binary state you want to teach, and assert the Enable input. The current location will then be linked to the current input A state. Deassert Enable and repeat as desired with the other A state.
- Input B switch polarity can be inverted via a checkbox in the Homing Setup dialog. When home switch polarity is inverted, ClearPath interprets Input B-low as “in the home switch”, and Input B-high as “not in the home switch”.
- Disable time = 10 mS

MODE CONTROLS

Set Target Positions
Enter move distance (from home) for each input state.

Click to open Torque Limit Setup dialog. Click to open Homing Setup dialog.

Position Selection Setup (cnts)

1) A off: +10,000 2) A on: +100,000

Speed Limit (RPM): 1,500

Accel (RPM/s): 40,000

Profile Conversion: RAS™ 21 ms, Setup...

Torque Limit: OVR, Setup...

Homing: Setup...

Enable Teaching: ?

Enter max. desired motor speed. 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).

Enable teaching mode.
This allows the user to physically move a motor to a desired target position and save that position to the motor's memory (as opposed to keying in numerical values).

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

Inputs and Commands: Enable On/Off, Input A Position, Input B Home Switch

Override Inputs:

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.

ServoOn Output: Servo On

Displays HLFB output status.