# MOVE TO ABSOLUTE POSITION (4-POSITION, HOME TO HARD STOP)

Available on MCPV

## MODE DESCRIPTION

Command ClearPath to move to one of four preset locations. Perfect for replacing air cylinders in scenarios where more power and/or finesse are needed (and you want to position at more than just two locations).

**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 might be defined as 2000 encoder counts from home, while Position 2 might be defined as 5200 encoder counts from home.

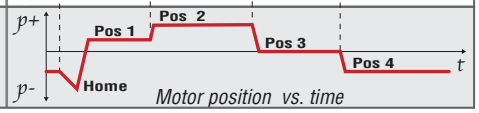
Assert the Enable Input to energize the motor. Once enabled ClearPath automatically homes to a hard stop to establish an absolute home reference position. Note: Homing is required in this mode.

After homing, ClearPath can be commanded to move to any of four user-defined positions by changing the state of Input A and B. Changing these inputs has the dual effect of selecting target position, and triggering the move. See table below for timing and input details. All moves execute at the user-defined speed and acceleration.

**Position Control** **Absolute Positioning (4-Position Programmable)**

| Signal | Function | Position Settings | | | | Example Timing |
|---|---|---|---|---|---|---|
| | | Pos. 1 | Pos. 2 | Pos. 3 | Pos. 4 | |
| Input A | Position Select A | LOW | HIGH | LOW | HIGH | |
| Input B | Position Select B | LOW | LOW | HIGH | HIGH | |
| Enable | Enable | Logic: High=Enable Low=Disable | | | | |
| Trigger | NA | NA | | | | |

**Notes:** ClearPath must home to a "hard stop" (either upon first enable or upon every enable) to establish a home reference position. All user-defined target positions are referenced to the home position.




## I/O FUNCTIONS

**Enable Input -** Asserting this input energizes the motor shaft.

**Input A -** This input, along with Input B, selects one of four user-defined positions to which the motor should move.

**Input B -** This input, along with Input A, selects one of four user-defined positions to which the motor should move.

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

**Notes:**

- If Input A or B changes while the ClearPath is moving, the behavior will depend on the new move target. If the new move

target is in the same direction as the current motion, the move will continue until the new target location is reached. If the new move target is in the opposite direction of current motion, the move will decelerate to a stop and then immediately begin the move to the new target location.

- The user-defined positions can be 'taught' instead of entered numerically through MSP. To do this, the motor must be in a Logic Power Backup (LPB) 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 inputs A and B 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/B state. Deassert Enable and repeat as desired with other A/B states.
- Changing the state of Input A and/or B while ClearPath is in motion cancels the move in progress. ClearPath immediately ramps to a stop and initiates a new move to the newly indicated target position.
- Disable time = 10 mS

## MODE CONTROLS