Using Modbus with Leadshine Drivers

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1. Reading Motor Position

- To read the current motor position, access the holding register at address 0x1014 (high 16-bit) & 0x1015 (low 16-bit). The value returned will be in pulses.

2. Reading Motor Velocity

- To read the current motor velocity, access the holding register at address 0x1046 (high 16-bit) & 0x1047 (low 16-bit). The speed will be provided in rpm.

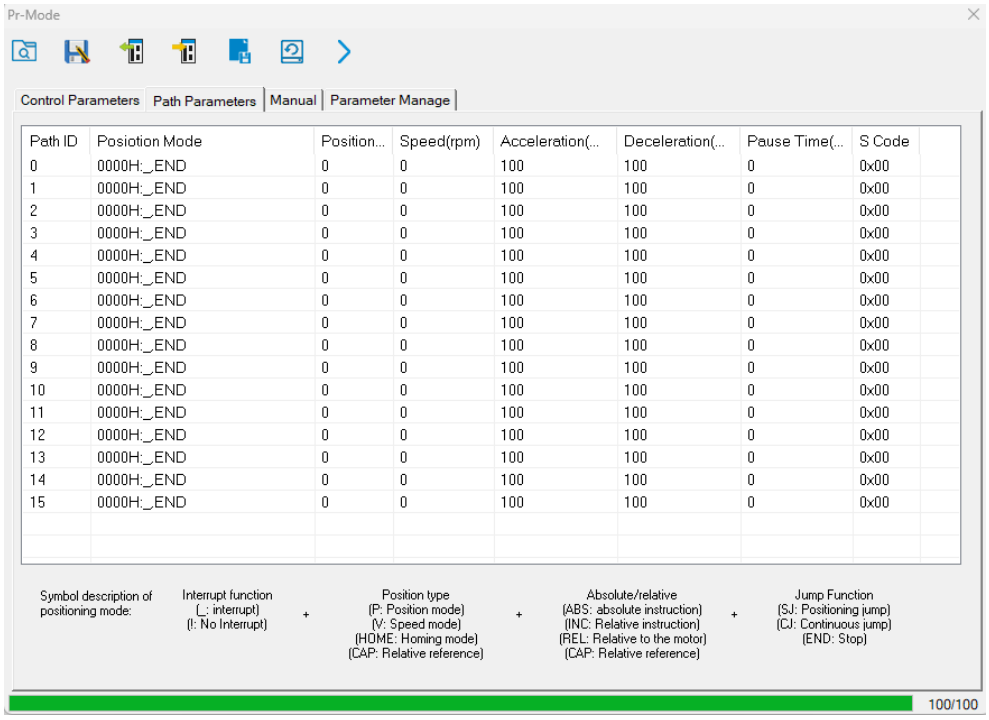
3. Jogging the Motor

- Before jogging the motor, adjust the jog parameters in Pr6.0 and the following three parameters.
- To initiate a jog, write to the holding register at address 0x1801:
    - For clockwise (CW) jogging, write the value 0x4001.
    - For counterclockwise (CCW) jogging, write the value 0x4002.
- To jog continuously without stopping, update the register with the chosen value every 50 ms.

4. Configuring and Initiating Pre-Saved Paths

- Pre-Configuration:

- Pre-configure paths (0-15) by selecting the command mode (position, velocity, e-stop, etc.).
- For position mode, configure the target position.
- For velocity mode, set the desired speed (use a negative speed value for counterclockwise movement).
- Program the acceleration and deceleration rates.



- Launching the Path:

- To launch a pre-configured path, write the corresponding value to the holding register at address `0x6002`:
 - For path 0: write `0x10`
 - For path 2: write `0x12`
 - Continue similarly for other paths.
 - This action triggers the movement along the specified path. Refer to page 42 of the Leadshine documentation for further details.

- Monitoring Movement:

- Monitor the progress of the movement by reading the same holding register. Additional information can be found on page 42 of the Leadshine documentation.

5. Dynamic Control:

- Configuring Dynamic Control:

 - Use path number 0 for dynamic changes in speed or final position.
 - Configure the movement type (position, velocity, homing, etc.) in the holding register `0x6200` (Pr9.00).
 - For position mode, set your target position in the holding registers `0x6201` (Position H, Pr9.01) and `0x6202` (Position L, Pr9.02) in pulses.
 - Set the speed in the holding register `0x6203` (Pr9.03) in RPM. Use a negative speed value for counterclockwise movement.
 - Configure acceleration and deceleration rates in the holding registers `0x6204` (Pr9.04) and `0x6205` (Pr9.05).

Additional information can be found on page 55 of the Leadshine documentation.

- Starting Movement:

- To initiate the movement, write the value `0x10` to the holding register `0x6002` (trigger register) corresponding to path 0.

- Changing Speed or Position Dynamically:

- Update the speed or position as needed.
- To apply these changes, re-send the value `0x10` to the trigger register `0x6002`.

By following these steps, you can dynamically control the speed and position of your motor using the Modbus protocol with Leadshine drivers.