# Instructions for the Upper Computer_V2.3

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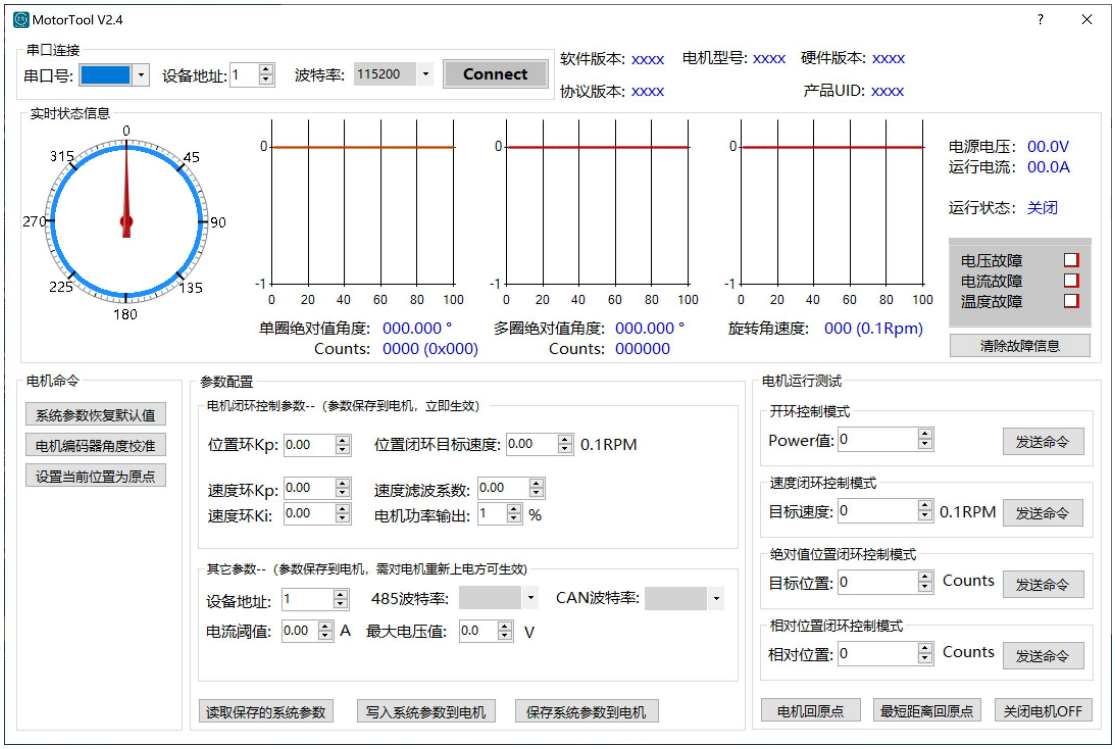
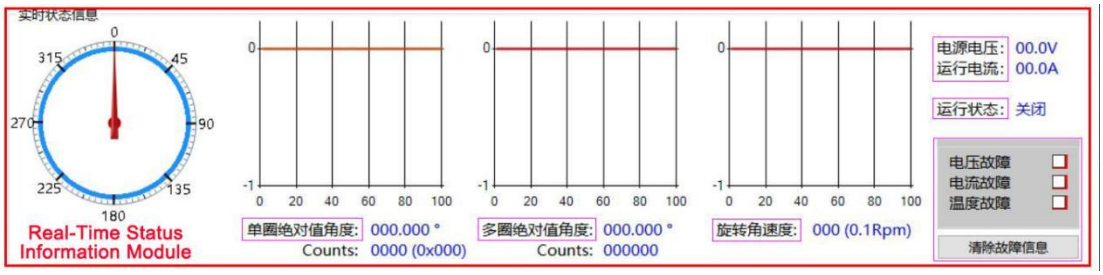
The function of the upper computer is based on RS485 communication protocol. If you need a more detailed description, you can refer to the RS485 communication protocol document.




## ● Serial Port Connection Module


Correctly select the current COM port, device address, and baud rate. The default device address is 1, and the baud rate is 115200. Click the “Connect” button, the upper computer will try to communicate with the motor driver. If it is successful to communicate, the current device information will be displayed in the upper right corner of the interface.

## ● Real-Time Status Information Module




This functional module displays the current single-turn absolute angle, multi-turn absolute angle, speed, power voltage, operating current, operating status, fault information, etc. of the current motor in real time.

- **Motor Command Module**


1.系统参数恢复默认值-System Parameters Restore Defaults: The motor parameters restore system default values.

2.电机编码器角度校准-Motor Encoder Angle Calibration: Make sure the motor is without load when it enters encoder calibration! Do not disturb the motor during calibration! The calibration time is about 40 to 90 seconds, the data of upper computer is not updated during the calibration.

3.设置当前位置为原点-Set the Current Position as the Origin: The motor makes the current position as origin of single-turn absolute.

## Parameter Configuration Module


1.电机闭环控制参数-Motor Closed-loop Control Parameters: PID parameters for motor closed-loop control. The motor defaults to no-load PID parameters. Writing or saving to the motor takes effect immediately.

2.其它参数-Other Parameters: Current threshold, voltage threshold, RS485 baud rate and other parameters are configured and saved to the motor, with turning the power off to restart the motor system to take effect.

3.读取保存的系统参数-Read the Saved System Parameters: Read the permanently saved system parameters of the motor.

4.写入系统参数到电机-Write System Parameters to the Motor: The motor receives the parameters after parameters are written to it, but does not save them to the system. This command is mainly used for PID debugging. During PID debugging, the parameters are sent to the motor with this function. When PID debugging to a ideal state, the parameters can be saved permanently by saving the system parameters to the motor.

5.保存系统参数到电机-Save System Parameters to the Motor: The motor receives the parameters and saves them permanently in the Flash. Note: **except saving the parameters of motor closed loop control will take effect immediately, other parameters will take effect only after turning off the power to restart the motor.**

- **Motor Running Test Module**


1.开环控制-Open loop control: The data type of the input parameter is int16_t, and the range is -32768~32767. When the parameter value is negative number, it means the motor is in inversion. The bigger of the Power value, the higher of the output power.

2.速度闭环控制-Speed Closed Loop Control: The resolution is 0.1 rpm in motor speed mode. The data type of the input parameter is int16_t, and the range is -32768~32767. When the parameter value is negative number, it means the motor is in inversion.

3.绝对值位置闭环控制-Absolute Position Closed Loop Control: Absolute value closed-loop control of motor. Control the motor to an absolute value position by this command. Angle° = Counts*(360/16384)

4.相对位置闭环控制-Relative Position Closed Loop Control: Relative position closed-loop control of motor. The relative movement angle of the motor based on the current position. The data type of the input parameter is int16_t, and the range is -32768~32767. When the parameter value is negative number, it means the motor is in inversion. Angle° = Counts*(360/16384)