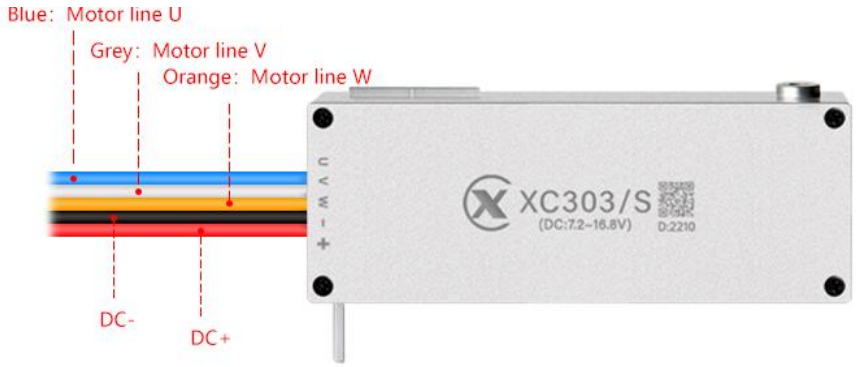
User Manual of XC303

1. Specification



Item	min	max	Unit
DC Input voltage	7.2	16.8	V
Electrical rotation speed	2400	36000	rpm
Working current		30 sustainable operation	A
Operating temperature	-40	100	℃
Short circuit protection	120		A

- Protection type: under voltage, over voltage, over current, over temperature, stalling, short circuit protection
- Control method: PID current and PID speed control loops, the rotation speed is more stable
- Switch mode: support Hall speed regulation and conversion of rotation direction

Please select and mount the magnets on the triggers according to the location of the Hall sensors in the figure below:

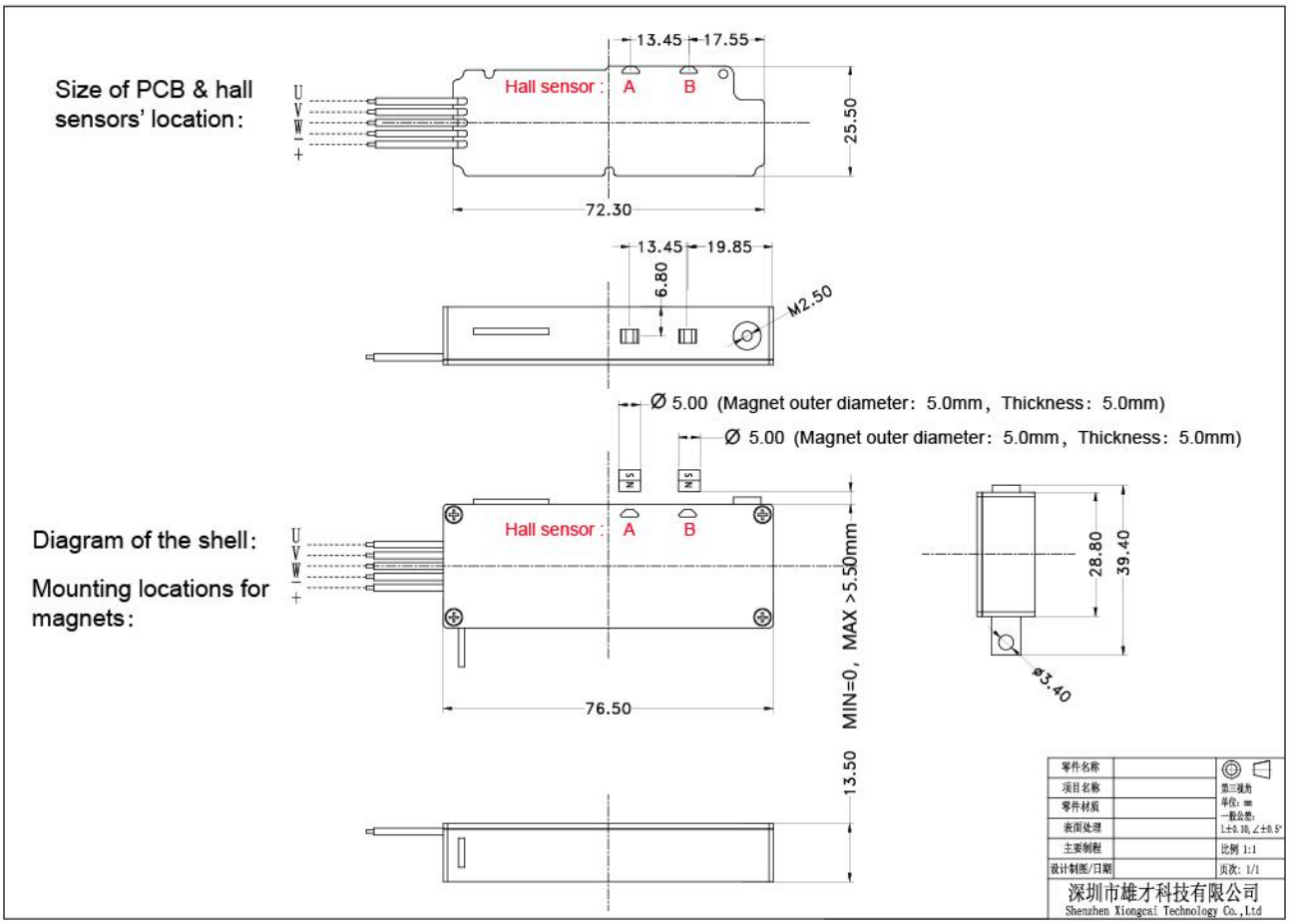


Figure 1

Remark:

1. Figure 1 above shows the relative position of the Hall and the installation suggestion of the magnet. The N pole of the magnet used to adjust the speed is facing the controller Hall. The magnet materials are all Nd2Fe14B
2. Hall sensor A & B
   - For dual triggers, A is for CCW rotation, B is for CW rotation
   - For single trigger, A is for speed adjustment, B is for switching direction

2. Operating procedures

Single trigger

- Throttle trigger: The N pole of the magnet is facing the Hall sensor. The closer the magnet is, the larger the throttle will be, otherwise the throttle will decrease.
- Trigger to switch direction: Forward and reverse control. The direction can only be switched when the motor is not turning. While the motor is running, it cannot switch directions. The state used is the state when the motor is stopped.

Dual triggers

- Trigger: Two triggers correspond to forward and reverse throttle respectively
- Press the forward rotation trigger, the motor will run clockwise, and press the reverse rotation trigger, the motor will run counterclockwise. Press the two triggers at the same time to turn on the back and forth rotation mode. After the vibration mode is turned on, the throttle value depends on the trigger with the larger throttle, and the duration of the back and forth rotation is proportional to the respective throttles of the two triggers.

Start up

- After connecting the battery or power supply, if the motor sounds (simplified music sound do, me, so), it means that the power is on normally

3. Trouble Shooting

Various situations may be encountered during the operation of the equipment, and the following solutions can be used to quickly solve the problem.

Fault	Cause	Solution
The motor makes 2 consecutive beeps	Supply voltage too high / too low	Please adjust the voltage within the working range
The motor makes 3 consecutive beeps	The temperature of the PCB is more than 100 ℃	Wait until the temperature of the PCB to be less than 100 ℃ before working
The motor makes 4 consecutive beeps	Abnormal current	Please check if there is a short circuit in the line
The motor makes a continuous noise Ding--ding--ding--ding--	Abnormal trigger signal / magnetic field out of range	1. Check if the trigger is depressed 2. Check the parameters of the magnet
The motor can be turned on normally, but the trigger does not respond	The magnetic field signal is too weak / there is no magnetic field signal / the direction of the magnetic field is wrong	1. Check whether the magnet is qualified 2. Check if the magnet position and orientation is correct
No response at startup	The power supply line is abnormal	Check wiring connections
Other	Other	Unplug the power first, then power on again

Note: If the abnormal situation that occurs is not in the above list or the problem cannot be solved according to the solutions we have given, please contact us.