方位角校准步骤：

方式一 ——平面校准：

1.将产品接入系统中 ，产品置于水平状态；

2.打开串口调试工具，发送 01 06 00 14 00 00 C9 CE；

3.将产品在水平面内（俯仰角和横滚角均在±5°以内）绕 z 轴（z 轴为竖直方向）进行旋转，旋转 2-3 圈，旋转过程尽可能采用慢速并近匀速旋转，旋转一周的时间控制在 10 秒到 15 秒之间；

4.将罗盘绕 X 轴或者 Y 轴进行旋转，旋转过程可以采用慢速并近匀速旋转，绕每个轴旋转 2-3 圈，旋转一周的时间约为 15 秒；

5.完成校准，发送 01 06 00 15 00 00 98 0E 保存校准。

方式二——多面校准:

1.将产品在使用环境中，校准时尽量不要携带钥匙、手机等有磁物品；

2.将罗盘放置于水平状态（±5°以内）；

3.用 16 进制格式发送下面校准命令：01 06 00 11 00 00 D9 CF;

4.产品置于水平状态，正面朝上（俯仰、横滚都为 0±5°以内），近视匀速旋转一周，旋转一周用时 10 秒以上；

5.产品置于视屏状态，安装面朝上（俯仰为 0±5°以内，横滚为 180±5°以内），近视匀速旋转一周，旋转一周用时 10 秒以上；

6.产品置于垂直状态，壳体的光滑侧面朝下（俯仰为 0±5°以内，横滚为 90±5°以内），近视匀速旋转一周，旋转一周用时 10 秒以上；

7.产品置于垂直状态，壳体的另一个光滑侧面朝下（俯仰为 0±5°以内，横滚为-90±5°以内），近视匀速旋转一周，旋转一周用时 10 秒以上；

其中 4.5.6.7 步骤可以交换；

8.四个面旋转完以后，发送 16 进制命令 01 06 00 12 00 00 29 CF 保存校准;

9.校准完成。

清除校准数据：01 06 00 13 00 00 78 0F

注：绿色字体为 CRC 校验位

Method One: Plane calibration:

1. Connect the product to the system and place the product in a horizontal state;
2. Open the serial port debugging tool and send 01 06 00 14 00 00 C9 CE;
3. Rotate the product in the horizontal plane (both the pitch and roll angles are within ±5°) around the z-axis (z-axis is the vertical direction), and rotate 2-3 times. The rotation process should be as slow and close as possible Rotate at a constant speed, and the time for one revolution is controlled between 10 seconds and 15 seconds;
4. Rotate the compass around the X-axis or Y-axis. The rotation process can be slow and nearly uniform. It rotates 2-3 times around each axis, and the time for one rotation is about 15 seconds;
5. To complete the calibration, send 01 06 00 15 00 00 98 0E to save the calibration.

Method Two: Multi-faceted calibration:

1. Put the product in the use environment, and try not to carry magnetic objects such as keys and mobile phones during calibration;
2. Place the compass in a horizontal state (within ±5°);
3. Send the following calibration command in hexadecimal format: 01 06 00 11 00 00 D9 CF;
4. The product is placed in a horizontal state, the front is facing upwards (both pitch and roll are within 0°, ±5°), the myopia rotates one circle at a constant speed, and one rotation takes more than 10 seconds;
5. The product is placed on the screen with the installation side facing up (pitch within 0°, ±5°, roll within 180°, ±5°), and the myopia rotates one circle at a constant speed, and one rotation takes more than 10 seconds;
6. The product is placed in a vertical state, with the smooth side of the shell facing down (pitch within 0°, ±5°, roll within 90°, ±5°), and the myopia rotates one circle at a constant speed, and one rotation takes more than 10 seconds;
7. The product is placed in a vertical state with the other smooth side of the shell facing down (pitch within 0°, ±5°, roll within -90°, ±5°), and the myopia rotates one circle at a constant speed, and one rotation takes more than 10 seconds;

Among them, step 4.5.6.7 can be exchanged;

8. After the four faces are rotated, send the hexadecimal command 01 06 00 12 00 00 29 CF to save the calibration;
9. The calibration is complete.

Clear calibration data: 01 06 00 13 00 00 78 0F

Note: The green font is the CRC check digit. Please enter the command **770500530058** before calibrating to switch to the common protocol if you are using **Modbus** output compass