

# Experimental test report

|                                                                                                                                                                                               |                       |                                                                                                             |                                                                              |
|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------|-------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------|
| Original Model                                                                                                                                                                                |                       | 1.Scope of application:<br>This specification is applicable to the U100-2 brushless DC motor                |                                                                              |
| U100-2                                                                                                                                                                                        |                       |                                                                                                             |                                                                              |
| 2.Operating Condition                                                                                                                                                                         |                       |                                                                                                             |                                                                              |
| Item                                                                                                                                                                                          |                       | Specification                                                                                               | Condition Remark                                                             |
| 2-1                                                                                                                                                                                           | Rated voltage         | DC75.6V                                                                                                     |                                                                              |
| 2-2                                                                                                                                                                                           | KV                    | 65KV±5%                                                                                                     |                                                                              |
| 2-3                                                                                                                                                                                           | Voltage range         | 18S                                                                                                         |                                                                              |
| 2-4                                                                                                                                                                                           | Environment of use    | Temperature:20~40℃<br>Humidity:10~90%RH                                                                     | No condensation of water vapor                                               |
| 2-5                                                                                                                                                                                           | Save environment      | Temperature:-40~80℃<br>Humidity:5~95%RH                                                                     | No condensation of water vapor                                               |
| 3. Mesasuring condition                                                                                                                                                                       |                       |                                                                                                             |                                                                              |
| Item                                                                                                                                                                                          |                       | Specification                                                                                               |                                                                              |
| 3-1                                                                                                                                                                                           | Temperature           | 25±2℃                                                                                                       |                                                                              |
| 3-2                                                                                                                                                                                           | Humidity              | 65±20%                                                                                                      |                                                                              |
| 3-3                                                                                                                                                                                           | Motor state           | Motor shaft horizontal(lock the motor in a testfixture)                                                     |                                                                              |
| All data testing conditions: temperature 25℃, relative humidity 65% RH. If discrepancies arise, tests can be conducted under the following conditions: temperature 5~35℃; humidity 45~85% RH. |                       |                                                                                                             |                                                                              |
| 4. Mechanical Specification                                                                                                                                                                   |                       |                                                                                                             |                                                                              |
| Item                                                                                                                                                                                          |                       | Specification                                                                                               | Condition Remark                                                             |
| 4-1                                                                                                                                                                                           | Structure             | Motor as per specified external structure                                                                   | To Assembly drawing                                                          |
| 4-2                                                                                                                                                                                           | Weight                | 1.98±0.08kg                                                                                                 | Includes wires and propeller                                                 |
| 4-3                                                                                                                                                                                           | Appearance            | No mechanical damage or corrosion                                                                           | Visual Inspection (Permissible range and limits are specified in the sample) |
| 4-4                                                                                                                                                                                           | Axial gap             | 0mm                                                                                                         | Micrometer                                                                   |
| 4-5                                                                                                                                                                                           | Axial tension         | /                                                                                                           |                                                                              |
| 4-6                                                                                                                                                                                           | Angle of rotation     | 360°                                                                                                        |                                                                              |
| 4-7                                                                                                                                                                                           | Direction of rotation | Terminals U/V/W correspond to motor connector wiring. From the shaft end, viewed as clockwise (CW) rotation |                                                                              |
| 5.Performance and characteristics                                                                                                                                                             |                       |                                                                                                             |                                                                              |
| Item                                                                                                                                                                                          |                       | Specification                                                                                               | Condition Remark                                                             |
| 5-1                                                                                                                                                                                           | No-load speed         | 1842±5%RPM                                                                                                  | Rated voltage:27.3V                                                          |
| 5-2                                                                                                                                                                                           | No-load current       | ≤2.3A                                                                                                       |                                                                              |
| 5-3                                                                                                                                                                                           | Phase resistance      | 70.5mΩ±5%                                                                                                   |                                                                              |

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| 6. Reliability experiment                                                                                                        |                                                 |                                                                                                                                                                                                 |                                                           |
|----------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------|
| Item                                                                                                                             |                                                 | Standard test condition                                                                                                                                                                         | Judging characteristic                                    |
| 6-1                                                                                                                              | Life test                                       | Voltage: 75.6V DC / Load: 40 inch propeller / Test mode :Throttle under 65% (current controlled within 30A, thrust under 14 kg). Load life test: continuous rotation for 3 hours with no issues | After the experiment, should meet the requirements of 7-1 |
| 6-2                                                                                                                              | High temperature storage test                   | Temperature:80℃<br>Time: 48 hours                                                                                                                                                               |                                                           |
| 6-3                                                                                                                              | Low temperature storage test                    | Temperature:-20℃<br>Time: 48 hours                                                                                                                                                              |                                                           |
| 6-4                                                                                                                              | High temperature operation experiment           | Temperature:70±2℃<br>Time: 24 hours                                                                                                                                                             |                                                           |
| 6-5                                                                                                                              | Low temperature operation experiment            | Temperature:-20±5℃<br>Time: 24 hours                                                                                                                                                            |                                                           |
| 6-6                                                                                                                              | High temperature and high humidity storage test | Humidity:90%RH<br>Time: 48 hours<br>No condensation of water vapor                                                                                                                              |                                                           |
| 7. Judging characteristic                                                                                                        |                                                 |                                                                                                                                                                                                 |                                                           |
|                                                                                                                                  | Item                                            | Judging characteristic                                                                                                                                                                          |                                                           |
| 7-1                                                                                                                              | Table A                                         | 1.The change of load speed should be within 30% of the initial value.                                                                                                                           |                                                           |
|                                                                                                                                  |                                                 | 2.the change of load current should be within 30% of the initial value.                                                                                                                         |                                                           |
|                                                                                                                                  |                                                 | 3.The resistance variation between the terminals is within the initial value of 30%.                                                                                                            |                                                           |
|                                                                                                                                  |                                                 | 4.Standard test condition: Rated voltage                                                                                                                                                        |                                                           |
| 8.Usage Precautions                                                                                                              |                                                 |                                                                                                                                                                                                 |                                                           |
| 8-1: Handle the motor carefully during transport to avoid damage to the motor body and performance due to collisions or impacts; |                                                 |                                                                                                                                                                                                 |                                                           |
| 8-2: Store the motor in a cool, dry, and non-corrosive environment, with storage duration not exceeding six months;              |                                                 |                                                                                                                                                                                                 |                                                           |
| 8-3: Do not frequently obstruct the motor shaft when powered on;                                                                 |                                                 |                                                                                                                                                                                                 |                                                           |
| 8-4: Complete soldering within 5 seconds to avoid damaging terminals or wires.                                                   |                                                 |                                                                                                                                                                                                 |                                                           |