



TASE300 Waterproofness Test

January 20, 2012

Author:

Charles Audette

2621 Wasco Street / PO Box 1500 / Hood River, OR 97031

(541) 387-2120 phone / (541) 387-2030 fax

www.cloudcaptech.com / sales.cct@goodrich.com / support.cct@goodrich.com



Cloud Cap Technology, a Goodrich Company

Table of Contents

1	Purpose.....	3
2	Waterproofness Test	3
2.1	Spray Proof Test.....	3
3	Waterproofness Test Results.....	3
4	Testing Photos.....	4
5	Future Corrective Actions.....	6
5.1	Tilt cover to structure interface	6
5.2	IR lens to cover interface	6

1 Purpose

This test was designed to establish waterproofness criteria for the TASE300 following the testing standards and procedures created based on DO-160 test criteria, with modifications centered on actual product usage.

2 Waterproofness Test

Category R - Equipment installed in locations where it may be subjected to a driving rain or where water may be sprayed on it from any angle is identified as Category R. For equipment intended for installation in such locations, the spray proof test procedure applies.

2.1 Spray Proof Test

1. Mount the equipment according to spec with all connectors and fittings engaged.
2. With the equipment operating, subject it to a shower of water from a showerhead nozzle.
3. The water shall be directed perpendicular to the most vulnerable area(s) of the equipment for a period of 15 minutes. The showerhead should be located 2.5 m away from the equipment and emit a volume of water at a rate of 450 liters per hour (or fill a 5 gal bucket in 2 minutes and 31 seconds).
4. Determine compliance with the applicable equipment performance standards

3 Waterproofness Test Results

- After running the TASE 300 through the waterproofness test, the gimbal remained fully operable in every test up to CCT's functional performance requirements.
- The crown, the motor ear, and the encoder ear on the clevis are waterproof when properly sealed.
- The payload ball allows a significant amount of water to enter the payload area through the FLIR camera O-ring and in the corners of the payload ball along the tilt arches.

4 Testing Photos

The TASE300 is soaked with water (**Figure 1**).



Figure 1 - Waterproofness Test

The distance from the hose to the gimbal is shown in the spray proof test (**Figure 2**).



Figure 2 - Spray Proof Test

The encoder ear stayed dry during the waterproofness test (**Figure 3**).

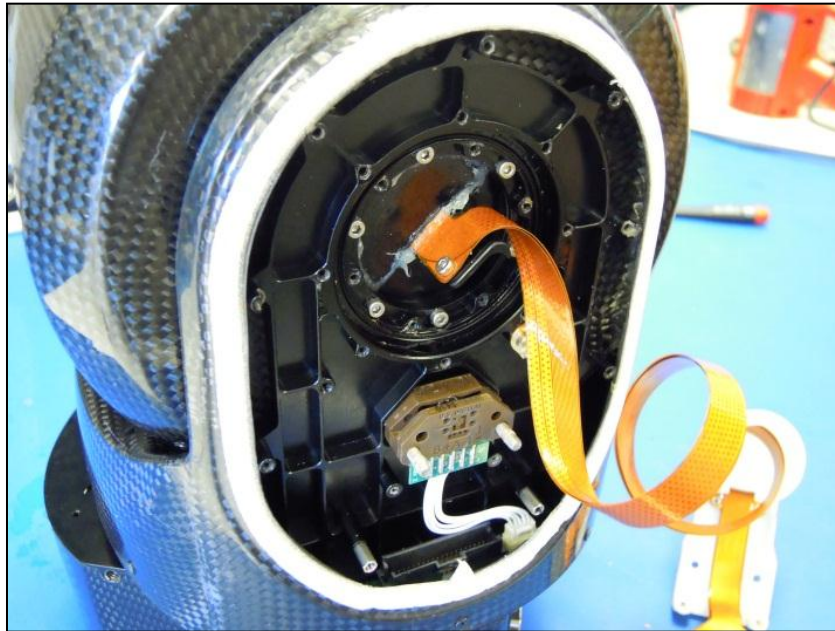


Figure 3 - Encoder Ear

The motor ear stayed dry during the waterproofness test (**Figure 4**).

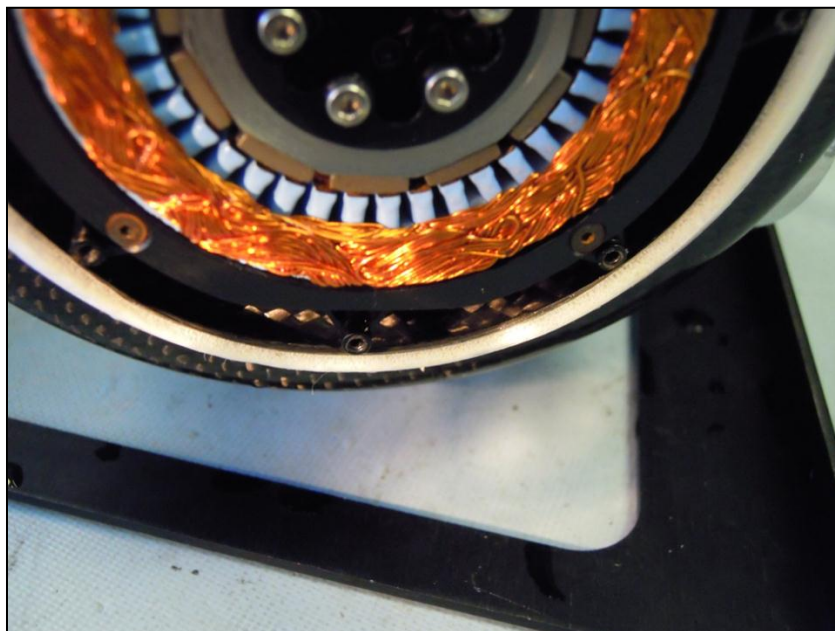


Figure 4 - Motor Ear

Small amounts of water are shown inside the payload ball on the board (**Figure 5**).

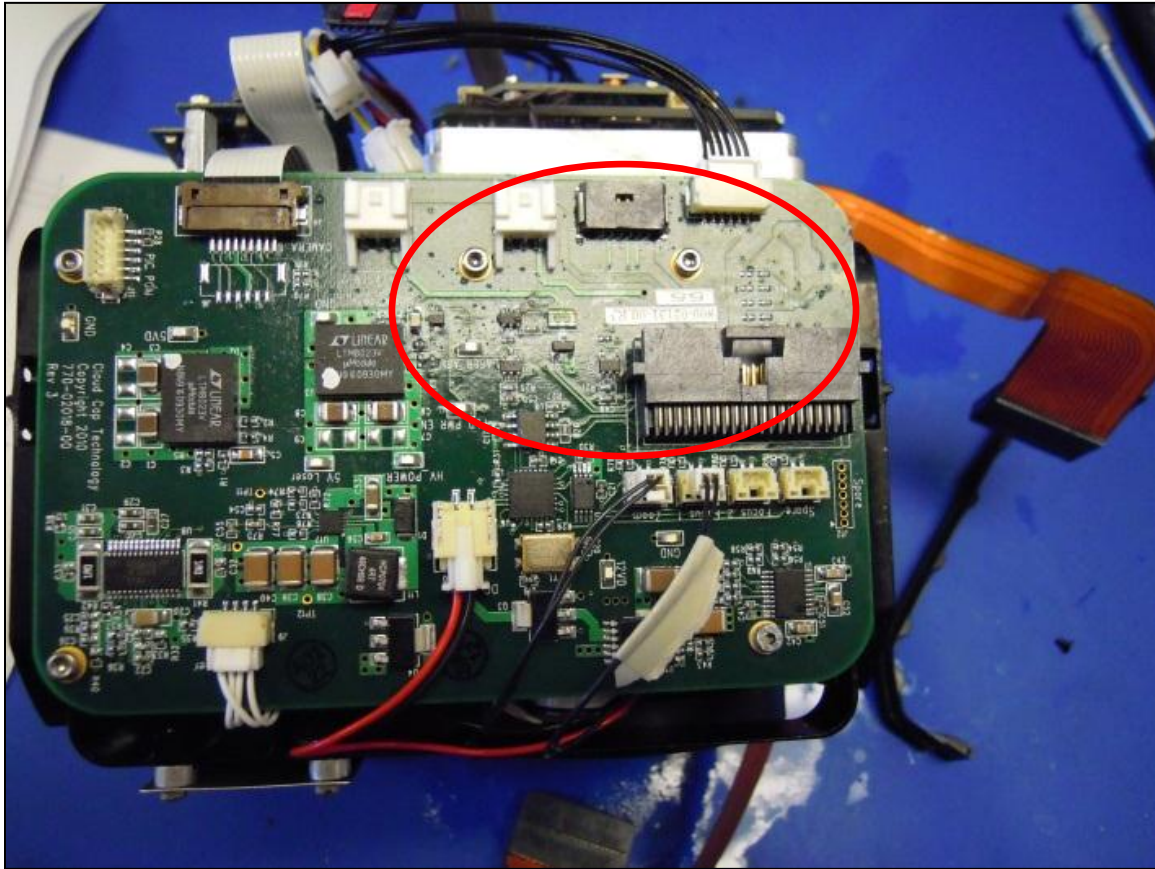


Figure 5 - Inside Payload Ball

5 Future Corrective Actions

5.1 Tilt cover to structure interface

- Ensure cover is properly sealed
- Ensure the corners of the payload ball are not warping from over-tightened screws

5.2 IR lens to cover interface

- Thicker and tighter fitting O-ring
- Better sealant on the O-ring