

Inflatable Space Habitat Load Cell

Industry: Aerospace

Summary

Customer Challenge

Inflatable space habitats are the newest innovation in the space industry, creating a new space for humans can live and work past the Earth's atmosphere. A space company wants to test the overall design and material of the inflatable habitat by conducting a burst test.

Interface Solution

Multiple clevises and LP Stainless Steel Load Pins are attached to the in the webbing material that create the inflatable habitat. When pressure is increased within the inflatable habitat, the load pins will capture how much force the heavy duty material will hold at specific pressures until it explodes.

Results

Interface's LP Stainless Steel Load Pins successfully measured the amount of force the inflatable habitat could withstand during the burst test.

Materials

- LP Stainless Steel Load Pins
- Clevises
- BX8-HD44 BlueDAQ Series Data Acquisition System with supplied BlueDAQ software
- Inflatable Structure
- Customer PC

How It Works

1. Clevises and LP Stainless Steel Load Pins are embedded in the base of the inflatable habitat, where straps of hard duty material are woven together, creating the habitats structure. The LP's are connected to the BX8-HD44 BlueDAQ Series Data Acquisition System with supplied BlueDAQ software.
2. The habitat is inflated, and PSI is increased slowly until the habitat bursts.
3. The LP's measure the amount of force the woven heavy duty fabric could handle until it bursts.
4. Data is fed from the BX8-HD44 BlueDAQ Series Data Acquisition System with supplied BlueDAQ software to the customer's PC. The data can be displayed, recorded, and graphed.

