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STI's Load Pin Helps Control New Generation of Airships



Blimps are experiencing a resurgence in popularity due to their unique ability to stay aloft for long periods of time and to handle increasingly large payloads. In addition, their vertical takeoff and landing ability makes them valuable in remote locations. The new generation of airship is more efficient than its predecessors and employs a rigid structure using carbon composite fiber instead of metal. This allows airships as long as a football field to lift far heavier loads than ever imagined; potentially up to 1,000 tons. The new craft could also have military applications like providing a stable platform for logistic support, surveillance, and reconnaissance operations.

These lighter-than-air vessels also present a unique challenge to those responsible for their handling and maintenance. Ground crews rely on sophisticated hydraulic winch and cable systems to capture, reel-in, and secure blimps on the ground or in their hangars. The challenge for STI engineers was to create a sensor to monitor the forces on these winches. The solution was to replace the standard pin in the existing sheave bearing assembly with a load cell of the exact same diameter, length, and functionality. The resulting load pin, a modified 15,000lb model LDP, is internally amplified with 4-20mA output, fully welded to IP67 standards, and monitors the forces on the mooring winch with 0.75% accuracy. And here's another winner... this customized load cell delivered in only 4 weeks from receipt of the customer's purchase order!