

Datasheet

Intelligent Load Cell

The J + S intelligent load cell offers a subsea solution for monitoring mooring line and lifting loads. The load is measured directly at the point of interest, not on the sea-surface, and not calculated from indirect measurements. Batteries and electronics are ROV replaceable. Low power consumption modes allow up to ten years battery life in mooring line applications.

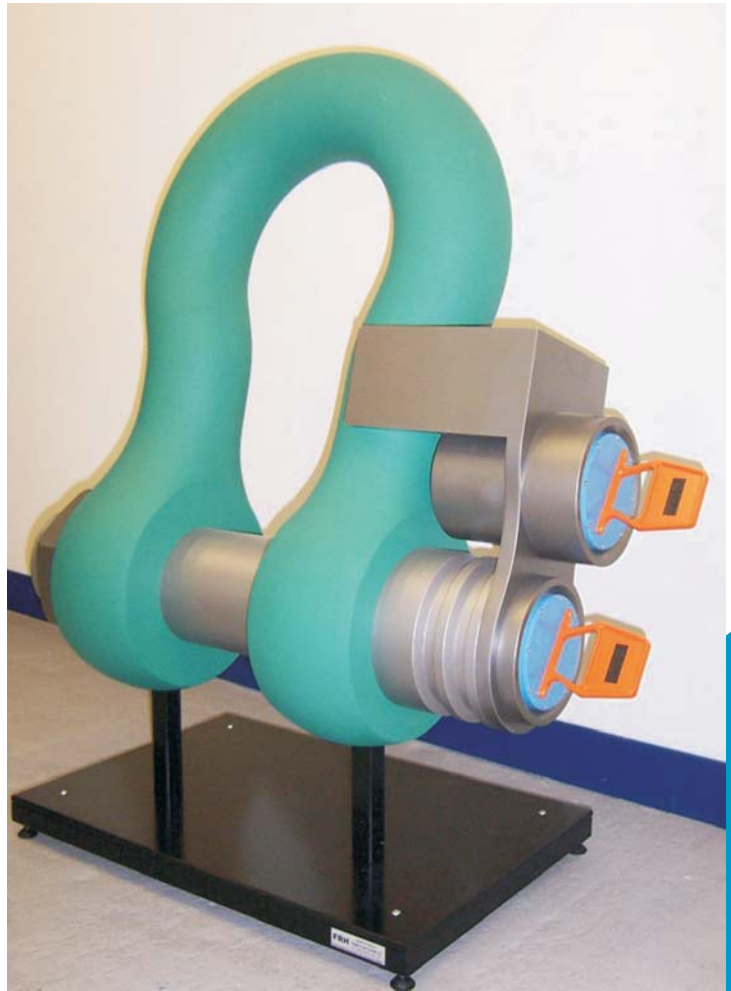
The Intelligent load cell is based on a shackle that can interconnect chains, cable, and moorings lines. It houses a load cell, power unit, and data transmission system. Information from the load cell is collected and digitised close to the sensor improving overall accuracy. Depending on the application the data can then be relayed to the surface by acoustic modem or wire, or displayed and logged locally for retrieval.

Sub Sea Lifting

For sub sea lifting applications using airbag or wire lifts, loads can be monitored continually, allowing divers and ROV operators advanced warning of when an object will move or reach safe load limits. This information significantly increases safety in lifting operations. The information can be transmitted acoustically to the surface or ROV, displayed on an underwater display for direct reading by diver, or transmitted through a copper / fibre umbilical.

Mooring Safety

The Load Cell is ideally suited to the monitoring of Floating Production System (FPS) mooring lines. One surface unit can monitor multiple Load Cells, allowing one Load Cell per mooring line. Data is collected and a daily history of loading levels produced to aid service life estimates. Events such as sudden increase in load above a set threshold or drops in load that may indicate a line failure are reported immediately to the surface.



Key Features

- Continuous data on mooring or lifting loads
- Data can be returned to the surface or ROV acoustically
- Data can be displayed on subsea display
- Data can be transmitted through copper / fibre comms
- Breakage / overload alarms
- Range of load cell capacities 25t to 600t
- Power saving modes with long battery life, up to 10 years
- All electronics and batteries are ROV replaceable
- Optional additional sensors for shock load, creep & fatigue investigation
- Optional deep water models
- Simple surface unit can support multiple load cells

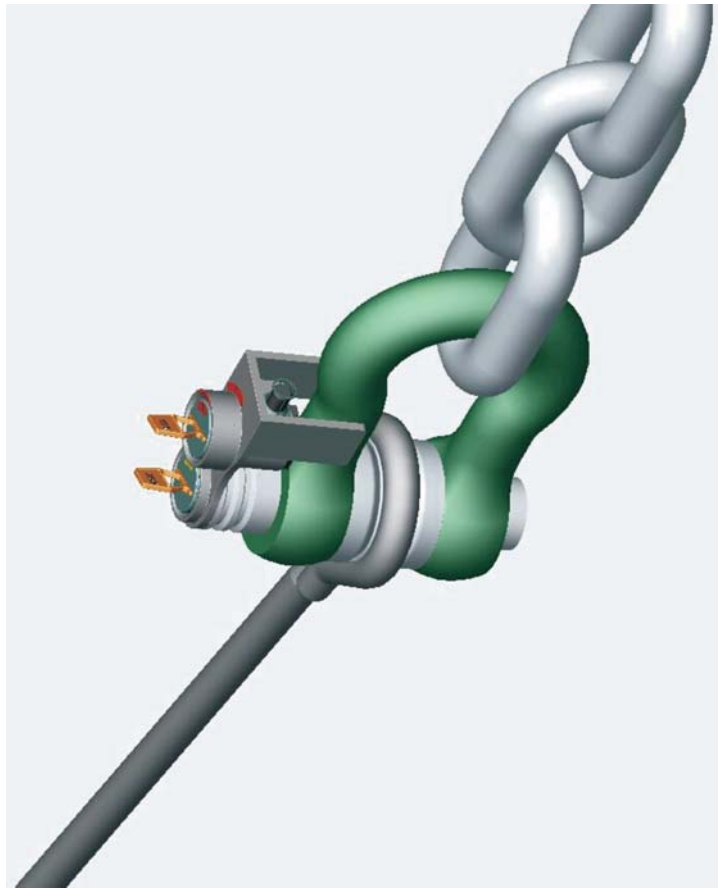
Intelligent Load Cell

Additional Sensors

A range of extra sensors can be included into the Intelligent Load Cell. Depth sensors can give information on lifting or check for breakage / creep in mooring lines.

Accelerometers can give information on shock loads. Inclinometers can be used to measure the angle of the cable and allow horizontal and vertical components of tension to be resolved.

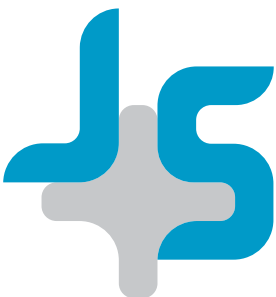
Further information on the dynamic behaviour of mooring lines can be obtained using two Load Cells, one located at each end of the line. This allows the transmission of strain along the line to be measured in field conditions and the data used to evaluate fatigue and lifting issues.



Feature

Detail

Load capacity	25tonnes to 600 tonnes
Rated depth	3,000 metres
Mechanical construction	316L Stainless Steel or Titanium
Output	RS232, RS422, 4-20mA
Communications	Acoustic modem Underwater display RS232, RS422 - ROV umbilical, control line Remote data logger
Power	24V local battery or external Battery pack change-out by ROV
Duration	Dependant on operating mode, up to 10 years



For further information on our Intelligent Load Cell please contact:

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