

Power Tongs in Oil Drilling Load Cell

Industry: Energy

Summary

Customer Challenge

As with many oil and gas applications, the demand for digital or recorded traceability is ever increasing. A force and torque measurement system is needed to ensure there is an appropriate amount of torque applied to a power tong during the tightening and loosening of shaft connections during the drilling process.

Interface Solution

Interface's WMCF Overload Protected Sealed Stainless Steel Miniature Load Cell is attached to the hydraulic actuator that controls the clamping force of the tong on the drill string, thus increasing accuracy over hydraulic measurements. The 2400 High Capacity Standard Stainless Steel Load Cell is attached to the hydraulic actuator that controls the bottom tong's clamping force on the drill string.

Results

Interface's force sensors accurately monitored the motor of the power tong's tightening mechanism, ensuring it tightens during operation at the right amount of force. It also successfully measured the force of the hydraulic actuator controlling the tong's clamping force.

Materials

- WMCF Overload Protected Sealed Stainless Steel Miniature Load Cell with Female Threads
- 2400 High Capacity Standard Stainless Steel Load Cell
- Power tongs

How It Works

The WMCF Overload Protected Sealed Stainless Steel Miniature Load Cell is attached to the motor regulating over tightening or under tightening the drill string. The 2400 High Capacity Standard Stainless Steel Load Cell is attached to the hydraulic actuator that controls the bottom tong's clamping force on the drill string.

Note: The 2400 series have a hermetic seal. They're not ATEX rated so we don't need a note for this.

