

# Smart Reel & Remote Control Panel



Radoil's Smart Reel provides automated constant tension during stack deployment and retrieval, significantly reducing the risk of umbilical damage.

The electronic remote station provides quick response control to eliminate excessive umbilical slack associated with the typical air actuated system.

The Smart Reel technology is far superior to standard constant torque control reels, widely available on the market. A constant torque reel causes a tension variation of as much as 3 to 1 due to the change in the spooling radius as the umbilical is deployed. This variance in tension during deployment and retrieval can damage umbilical cables, hoses and support sheaves unless the operator intervenes.

## Smart Reel - Advanced Umbilical Reel Controls



### Lowers Operating Cost & Improves Safety:

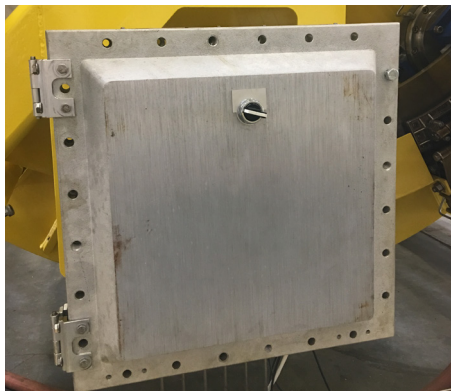
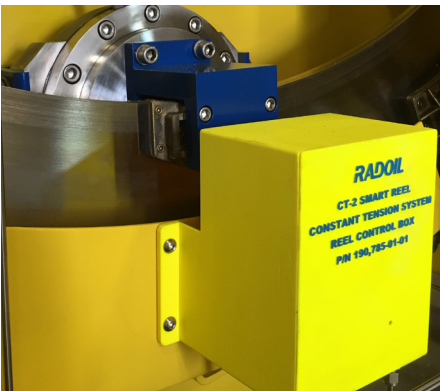
- Lowers Operating Cost by automating the reel control during high value riser deployment times
- Improves Safety by Automatically Controlling the Umbilical Tension – Protects the umbilical and down sheaves from Over-tension
- Improves Operational Efficiency by preventing umbilical from outrunning the riser – Automatically calculates the umbilical speed
- The Smart Reel upgrade offers near instantaneous response time from controls even mounted several hundred feet away
- Available on New Radoil Reels and Field Retrofit-able on existing Radoil Reels – BOP Control & IWOCSS Reels





## The innovative Radoil Smart Reel system Lowers Your Operating Expenses:

- The Smart Reel removes the operator, improving safety and reducing cost.
- Prevents damage and premature failure of the umbilical due to operator error.
- Prevents the umbilical from over-running the riser deployment. Recovering from an over-run condition can take hours of high value rig time during riser deployment. The Smart Reel will pay for itself by preventing just one instant of an over-run condition.
- Reduces the chance of damage to the umbilical, support sheaves, the reel and/or injury to personnel; lowering your risk and operational costs.
- Monitoring the torque during human operation can provide relevant data in the event of an umbilical failure. This can streamline the fault isolation process and reduce rig downtime.



Intrinsically Safe Control

## Smart Reel & Remote Panel



### Smart Reel Advantages:

Fully Automatic Reel Operations - No operator input required during operation

Protects Your Umbilical - BOP Stack can be run from surface to the seafloor and retrieved with the reel automatically controlling tension

Tension range, material diameter and reel width are all easily adjusted by qualified rig personnel.

Field Retrofit - Designed for quick retrofit to existing Radoil reels.

### Features, Specifications & Options:

The Smart Reel feature is provided on new Radoil Umbilical reels and is available in a retrofit kit that can be retrofitted in the field. The retrofit includes:

- Zone 1 control panel with proximity sensors
- Explosion proof control enclosure with PLC control.
- Generator with air motor provided to allow air flow to provide power to the system (no external electrical power required). (Optional)
- All necessary fitting, fasteners and accessories to easily retrofit your reels.



### How the Smart Reel operates:

An autonomous PLC monitors umbilical tension and adjusts torque as required. This prevents over pay-out on sudden stops as well as umbilical damage caused by operator error when the stack is being deployed. By transitioning from an air actuated system to an electronic controlled system, reel lag that can lead to equipment damage is effectively eliminated. While the reel can be controlled remotely from the new electronic panels, the automated system can remove the need for a dedicated operator. In addition to improved operation, the new Smart Reel can provide additional data, including length deployed and tension graphs.



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