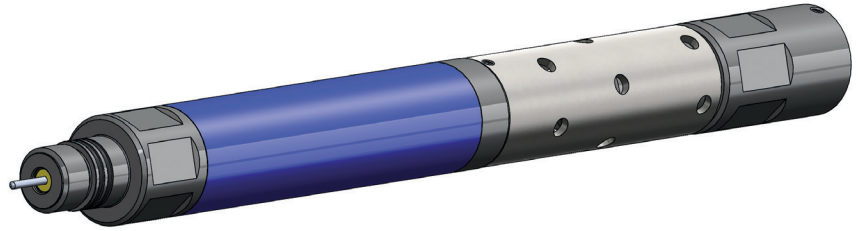


Wireline Cable Tension Monitoring Tool

Monitoring and maintaining safe cable tension downhole are essential to preventing pumpoff and reducing the risk of fishing operations during pumpdown in deviated and horizontal wells. The GR Energy Services wireline cable tension monitoring tool, incorporating SMART Sens™ technology, provides real-time cable tension and compression measurements to minimize risk and reduce operating costs.

Surface cable tension measurements do not account for the effects of friction in highly deviated sections, which makes it difficult to maintain safe cable tension. If the cable tension is too great, pumpoff can occur when the weak-point limit is exceeded. If the cable tension is too low, the tool string may begin to stick or slip, causing erratic tool string motion that increases the risk of cable damage or pumpoff.

Contact your GR Energy Services representative today to find out how the wireline cable tension monitoring tool can provide extra assurance in your wireline operations.



Benefits of using the GR cable tension monitoring tool

- Minimizes stuck tool strings and expensive fishing operations
- Compatible with commercial perforating systems
- Compact, low-maintenance design
- Does not require field calibration
- Fully combinable with the GR addressable wireline release tool

Features of the GR cable tension monitoring tool

- Monitors tension up to 10,000 lbf
- Measures compression up to 2,000 lbf
- Measures head voltage and temperature
- Operates in temperatures up to 350°F and pressures to 20,000 psi
- Uses standard 1½-in. ACME connections
- Communicates in real time with surface acquisition systems
- Provides accurate temperature- and pressure-compensated tension measurements without the need for oil compensation
- API RP-67 compliant

Wireline Cable Tension Monitoring Tool

Measurement Specifications

Tension range	10,000 lbf
Compression range	2,000 lbf
Resolution	5 lbf
Sampling rate	10 Hz

Environmental Specifications

Pressure rating	20,000 psi
Temperature rating	350°F
Axial shock	2,000 g, 0.25 ms
Max tensile load	100,000 lbf

Mechanical Specifications

OD	2.75 in.
Makeup length	2.2 ft
Weight	33.5 lbm
Upper connection	1 $\frac{1}{8}$ -in.-6 ACME pin
Lower connection	1 $\frac{1}{8}$ -in.-6 ACME box

Electrical Specifications

Max pass-through voltage*	600 V DC
Operating voltage*	20 V to 50 V
Current draw	35 mA

*Polarity configured to be compatible with perforating switch system.