

Data Acquisition System (DAS) for slickline fatigue life tracking

The CTES Orion^{SL} LifeSaver acquires, records, and displays slickline operating data to estimate fatigue along the length of a slickline. The system's calculated remaining fatigue life information is useful to help avoid costly field failures and to optimize the slickline replacement schedule.

The Orion^{SL} LifeSaver monitors slickline forces and bending events as tools are run in and out of the well. The standalone system records slickline depth information via an encoder mounted on a measuring device. Useful for post-job modeling, Orion^{SL} LifeSaver's job data is written continuously (one time per second) onto a USB flash drive.



Software features and benefits

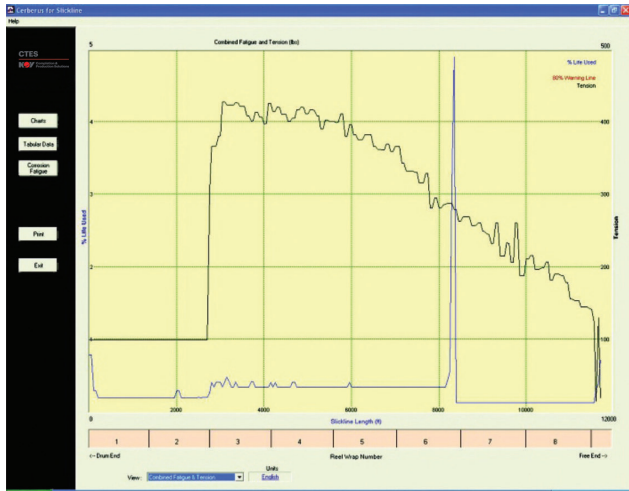
OrionNET™ software arrives pre-installed in the unit:

- Provides real-time slickline fatigue calculations
- Acquires, displays, and records depth, tension, line speed, and one additional analog data channel
- Allows users to see rapidly changing values in tension or depth via a high-speed data display (event-driven; up to 10 times per second)
- High-speed, sensitive tension display detects “tickle” (small variations in tension) when moving past downhole restrictions
- Large graphical display screen includes analog gauge, strip chart, and easy-to-read digital displays
- Easy operation: single switch provides “power on and go” data acquisition and USB media storage
- User-set alarms for all input channels drive digital output for horns, lights, or relays
- Easy zero or calibration of input sensors
- English or Metric units

Transfer real-time data by Ethernet or remove the USB flash drive and copy its contents to a PC-compatible location.



OrionNET software is pre-installed in the Orion^{SL} LifeSaver unit.



Review percent (fatigue) life used and tension

Control job parameters

Date	Event	Event Description
10-6-2008	Slickline	Filename: T1
10/6/2008 10:08:11 AM	Job	Orion Real-Time Fatigue Processing
10/6/2008 10:27:11 AM	Job	Orion Real-Time Fatigue Processing
10/9/2008 3:32:07 PM	Job	Orion Real-Time Fatigue Processing
10/31/2008 11:43:43 AM	Job	Orion Real-Time Fatigue Processing
10/31/2008 12:54:11 PM	Job	Orion Real-Time Fatigue Processing

Review event history

Electrical Specifications

Control Box

CPU	500Mhz Pentium® MMX
Input/Output	2 quadrature inputs 2 Analog inputs 4-20mA current loop sourced 2 outputs 24V at 500mA
Memory	Storage 2GB USB
Communications	Ethernet
Operating Voltage	12VDC at 1.5A
Humidity	98% without condensation
Operating temperature	-35° C to 65° C
Storage temperature	-40° C to 75° C
Shock/Vibration Protection	40g MIL-STD-810F IP 67

Display

Type	8.4" Color TFT LCD
Resolution	800 x 600
Back Light	CCFT
Brightness	400 NIT
Touch Screen	Yes
Operating Voltage	12VDC at 1A
Operating Humidity	98% without condensation
Operating temperature	-5° C to 55° C
Storage temperature	-20° C to 60° C
Shock/Vibration Protection	40g MIL-STD-810F IP 65

Electrical features

Up to 3000ft/min @ 500 pulses/ft
Dual-wheel measuring capability
Monitor has standard flat-panel mounting bracket for use with any standard commercial swing arm

Electrical options

Up to one hour of battery back-up time

Mechanical hardware

Control Box

Weight	10 lbs
Length	12"
Height	8"
Width	5"

Display

Weight	8 lbs
Length	10.5"
Height	9.5"
Width	3"
Viewing Area	8.4" diagonal

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