

Principle of Well Logging Optical Cables in South Sudan



Overview

□ Principle: Based on Rayleigh scattering to capture acoustic signals along the wellbore. □ Application: DAS is used to detect and locate leaks, monitor cement integrity, and identify mechanical issues within the well. Well logging, also known as borehole logging is the practice of making a detailed record (a well log) of the geologic formations penetrated by a borehole. The log may be based either on visual inspection of samples brought to the surface (geological logs) or on physical measurements made by. Optical fiber logging cable is a type of cable used in oil and gas well logging applications. It is designed to provide high-speed data transmission over long distances in harsh environments. Logging cable is used to lower instruments into wellbores to take measurements of the subsurface. The Specialized Well Logging Techniques Training Course offers a comprehensive understanding of advanced borehole logging technologies used for geological, geophysical, and reservoir characterization. Participants will explore a range of tools and methods, including Caliper, Natural Gamma, Acoustic. Permanent downhole fiber-optic cables are critical infrastructure in wellbore monitoring systems, ensuring reliable transmission of data for applications such as distributed temperature, acoustic, and strain sensing (DTS, DAS, and DSS)—all with one 1/4-in control line.



Article Content

Mar 12, 2026

A High Data Rate Fiber Optic Well Logging Cable

This development has led to a new logging cable with superior mechanical properties, containing eight electrical wires and three

Nov 01, 2025

Well logging

This technique provides similar well information to conventional wireline logging but instead of sensors being lowered into the well at

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Optical fiber logging cable Special cable

Optical fiber logging cable enables the transmission of detailed data over long distances, making it an essential

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Cable Logging? Optical Fiber Logging?--JASON is ready for you!

Difference between Optic-Fiber logging and traditional cable logging The electrical-based sensors used in cable logging can not work

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New methods in geophysical exploration and monitoring with DTS and

Fiber-optic sensing opens up new possibilities for geophysical measurements with a broad range of applications in well logging (e.g.

May 18, 2026

Vertical seismic optical profiling on wireline logging cable

ABSTRACT Vertical seismic profiles are usually acquired by deploying downhole seismic sensors below a wireline logging cable. A

Feb 07, 2026

Application of Electro-Optical Hybrid Cables in Horizontal Well ...

Application of Electro-Optical Hybrid Cables in Horizontal Well Production Logging
Authors: Daofan Guo, Dong Yang Abstract: For

Jan 14, 2026

The Defining Series: Introduction To Wireline Logging

The Dawn of an Era The first well log was obtained in 1927 in Pechelbronn field in Alsace, France. The tool, invented by Conrad and

Sep 19, 2025

Review: Research on the development trends of measurement while ...

As one of the pivotal technologies in oil and gas field exploration and development, downhole measurement

Apr 04, 2026

Well Logging Engineering

Well log is a continuous record of measurement made in bore hole respond to variation in some physical properties of rocks through

Oct 25, 2025

Well Logging: Principles, Applications and Uncertainties

Record-ing the well log involves a number of steps, beginning with sensing and pre-processing the measurement in the logging tool

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Skills for Africa -SPECIALIZED WELL LOGGING TECHNIQUES

Through interactive sessions, case studies, and simulation-based exercises, the training provides a hands-on approach

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Hybrid Electro-Optical Cable for Coiled Tubing Logging and ...

This new hybrid cable and its associated surface and downhole system provide a single solution for interventions,

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Bazaid et al No 1

Specifically, we highlight the diagnostic power of distributed temperature sensing (DTS) and distributed acoustic sensing (DAS) in

Mar 16, 2026

Journal of Engineering Introduction and Investigation into Oil Well ...

This review aims to pinpoint on the most important logging processes used in oil wells, as well logs have an effective

Dec 13, 2025

Well Logging: Principles, Applications and Uncertainties

Well logging is a means of recording the physical, acoustic and electrical properties of the rocks penetrated by a well. It is carried out

Mar 11, 2026

Hybrid Electro-Optical Cable for Coiled Tubing Logging and ...

This study presents the evolution of downhole fiber optics to a new hybrid electro-optical cable for coiled tubing (CT)

Feb 05, 2026

Principles and Applications of Well Logging

This book primarily focuses on the principles and applications of electric logging, sonic logging, nuclear logging, production logging

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Well Logging Engineering

Signal transmission over the cable may be in analog or digital form. The cable is also used to transmit the electrical power from the

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Development and Application of Visual Logging Equipment

The Hawkeye downhole TV logging technology has been widely used in casing damage detection and production well

Nov 24, 2025

Permanent fiber-optic cable

Permanent downhole fiber-optic cables are critical infrastructure in wellbore monitoring systems, ensuring reliable transmission of

Sep 30, 2025

The High-temperature Resistant Well Logging Optical Cable

The High-temperature Resistant Well Logging Optical Cable Suitable for oil wells, gas wells, coal mines or under high temperature

Aug 02, 2025

Sudan buried logging fiber optic cable connector

This document proposes laying fiber-optic cables underwater along the River Nile to connect cities in Sudan. It notes that the River

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