Vietnam High Temperature Measurement Optical Cable Model



Overview

Temperature Estimation Method on Optic–Electric To estimate the temperatures of conductor and XLPE (cross-linked polyethylene) insulation of the submarine.

Key Takeaways

Fiber optic temperature measurement in Vietnam uses distributed temperature sensing (DTS) and fluorescent fiber optic systems, capable of high-precision, real-time monitoring for industrial and power applications. Distributed Temperature Sensing (DTS) SystemsDTS systems use the optical fiber itself as the sensing element, measuring temperature along the entire cable length. A laser pulse is sent through the fiber, and Raman scattering generates Stokes and anti-Stokes signals, whose intensity ratio determines the local temperature.

The backscatter timing allows precise location mapping of temperature along the fiber.

DT

S systems, such as AP Sensing solutions, provide continuous monitoring of underground or high-voltage cables, detect hotspots, and support Real-Time Thermal Rating (RTTR) and Dynamic Cable Rating (DCR) for operational optimization.

DT

S instruments are designed to operate reliably in temperatures from -10°C to 60°C and in safety-critical environments.

© 2026 METRA FIBER MARKET - All rights reserved

Fluorescent Fiber Optic Temperature Sensors

Fluorescent fiber optic sensors are point-type sensors that measure temperature at specific locations. In Vietnam, suppliers like fjinno provide systems covering 1 to 64 sensing channels, suitable for switchgear, transformers, textile plants, steel mills, and seafood processing facilities. These sensors are fully dielectric, EMI-immune, and rated ≥100 kV, making them ideal for high-voltage industrial applications.

They offer long service life (>25 years), zero calibration requirements, and continuous online monitoring, outperforming thermocouples, RTDs, or infrared thermography in harsh environments.

Optical Cable Construction for Temperature Sensing

A typical DTS optical fiber unit includes multi-mode fibers enclosed in a stainless steel tube, with interstitial jelly to protect the fibers. The sensing fiber is placed close to the cable core for accurate conductor temperature measurement. Some models allow additional fibers for optional sensing channels.

These designs enable dynamic rating systems that assess actual cable capacity, environmental conditions, and cable health in real time. Local Availability and Suppliers in Vietnamfjinno: Offers fluorescent fiber optic temperature sensors and DTS systems for industrial and high-voltage applications, with OEM/ODM support and regional distribution. Yokogawa DTSX1: Provides distributed temperature sensing for long-distance monitoring, fire detection, and preventative maintenance in industrial plants.

A

P Sensing: Supplies DTS and DAS solutions for underground and subsea power cables, with integrated software for asset visualization and condition assessment. Key AdvantagesHigh-resolution, continuous temperature monitoring over long distances. Real-time detection of hotspots and abnormal temperature rises.

Reduced maintenance costs and improved operational safety. Suitable for high-voltage, high-temperature, and harsh environmental conditions. Supports dynamic cable rating and predictive maintenance strategies.

For Vietnam projects, selecting between distributed DTS systems and fluorescent point-type sensors depends on whether continuous monitoring along the cable is required or if specific point measurements suffice. Both systems are widely used in power grids, industrial plants, and high-voltage equipment monitoring.

© 2026 METRA FIBER MARKET - All rights reserved

Article Content

Temperature Estimation Method on Optic–Electric

To estimate the temperatures of conductor and XLPE (cross-linked polyethylene) insulation of the submarine cable based on the ambient

Top 10 Fiber Optic Temperature Sensing Monitoring System

Vietnam''s best fluorescent fiber optic temperature sensor manufacturers, factories, suppliers, wholesalers and distributors — fully compared in one guide.

Experimental study on practical application of optical fiber sensor ...

In this study, we examine two types of optical fibers inserted through two types of protective tubes attached on the outer surface of an equipment under extreme conditions in terms of

Multi-Parameter Optical Monitoring Solution Applied to ...

The monitoring system demonstrated herein uses Fiber Bragg Grating (FBG) sensors to measure multiple parameters, such as the distributed temperature of the power cable, external

Application of Distributed Optical Fiber Temperature Measurement in ...

This paper studies a distributed optical fiber temperature measurement system using smart cables, which combines fiber Bragg grating arrays and multi-core communication fibers for monitoring high

Power Cable Monitoring System

The power cable monitoring system provided by Sumitomo Electric, such as OPTHERMO™ and AOLCM system, contributes to robust asset management of power cable systems with real time

DTSX1 Fiber Optic Heat Detector | Yokogawa Vietnam

DTSX measures temperature distribution over the length of an optical fiber cable using the fiber itself as the sensing element and it is ideal for temperature monitoring over long distances and wide areas.

Distributed fiber optic temperature measurement system for cables

Based on the principle of Raman scattering effect, Fuzhou Yinuo Technology has developed a technology for installing distributed fiber optic temperature measurement in power cables, which can

DTSX3000 Distributed Temperature Sensor | Yokogawa Vietnam

© 2026 METRA FIBER MARKET - All rights reserved

DTSX measures temperature distribution over the length of an optical fiber cable using the fiber itself as the sensing element and it is ideal for temperature monitoring over long distances and wide areas.

Laying of Temperature-Sensitive Optical Cables in Vietnam s Utility ...

As Vietnam gets ready to install ten new underwater cables by 2030, the United States is pushing Vietnam to rethink interacting with Chinese companies, especially HMN Technologies.

Optical Fiber Sensors for High-Temperature Monitoring: A Review

High-temperature measurements above 1000 °C are critical in harsh environments such as aerospace, metallurgy, fossil fuel, and power production. Fiber-optic high-temperature sensors are gradually

Temperature Measurement Using Optical Fiber Methods: Overview

The paper deals with the overview of fiber optic methods suitable for temperature measurement and monitoring. The aim is to evaluate the current research of temperature

Temperature Measurement Using Optical Fiber Methods: Overview

Optical fiber sensors can be used in cases where standard electrical measurement methods cannot be used. These may be areas with high electrical and magnetic interference or critical areas.

Internal temperature measurement and conductor temperature calculation ...

Highlights • The temperature measurement effectiveness of optical fiber in the cable was studied. • The temperatures of the cable were measured by the BOTDR and thermocouples. • The

Vietnam Distributed Fiber Optic Temperature Sensor Market

The Vietnam Distributed Fiber Optic Temperature Sensor Market is primarily driven by increasing demand for real-time monitoring solutions in high-risk industries such as oil & gas, power ...

Progress Toward Sapphire Optical Fiber Sensors for High-Temperature ...

High-temperature measurements are of significant importance in various harsh-environment engineering fields, such as fossil fuel production, and the metallurgical and aviation

Internal temperature measurement and conductor temperature calculation ...

© 2026 METRA FIBER MARKET - All rights reserved

In recent years, the distributed temperature sensors (DTS) based on Raman optical time-domain reflectometry (ROTDR) or Brillouin optical-time domain reflectometry (BOTDR) technology

Flow, level, liquid analysis, optical analysis, pressure,

People for Process Automation offer you solutions and products in flow, level, liquid analysis, optical analysis, pressure, temperature measurement, software and

Contact Us

Continue your research online:

Website: https://metramarket.es
Technical inquiry: https://metramarket.es/contact.html

This document is for preliminary research. Verify specifications against current standards, product documentation and project requirements.

© 2026 METRA FIBER MARKET - All rights reserved