

OPPC optical cable conductor



Overview

OPPC (Optical Phase Conductor) is a specialized aerial power cable that integrates fiber optic units directly into the phase conductors of overhead transmission and distribution lines.

Key Takeaways

OPPC (Optical Phase Conductor) is an aerial cable that integrates optical fibers within phase conductors, enabling simultaneous power transmission and communication. OverviewOPPC is designed for use in power distribution networks where traditional ground wires are not feasible, making it an alternative to Optical Ground Wire (OPGW) systems ().

Unlike OPG

W, OPPC is energized along high-voltage power lines, meaning it carries current while also housing optical fibers for communication ().

Construction

The OPP

C cable combines fiber optic units with phase conductors, typically replacing one or more steel wires in conventional ACSR (Aluminum Conductor Steel Reinforced) cables. Its structure includes: Stainless steel tubes containing optical fibers, often with a capacity of up to 144 cores (). Steel core for mechanical strength.



Aluminum alloy outer wires to match the mechanical and electrical characteristics of standard phase conductors (). High-temperature resistant anti-corrosion lubricant to protect fibers under operating temperatures of 100-120°C (). The optical fibers are installed with excess length to prevent overstretching during operation ().

ApplicationsOPPC is primarily used in suburban and rural distribution networks with voltages below 110 kV, especially in 35 kV or lower lines where ground wires are not installed (). Key applications include: Power transmission and communication integration. Filling gaps in power distribution automation networks.

Special applications such as transmission line temperature measurement and defrosting ().

Technical Characteristics

Voltage rating: Up to 420 kV (). Mechanical and electrical properties: Similar to OPGW of the same specification, including resistivity, DC linear resistance, and torsion (). Operating temperature: Higher than OPGW due to continuous current conduction ().

Insulators and splice boxes: Specially designed to accommodate live line conditions ().

Advantages

Combines power transmission and communication in a single conductor. Utilizes existing tower infrastructure efficiently. Suitable for low and medium voltage networks where OPGW installation is impractical.

Provides high mechanical strength and environmental resilience (). In summary, OPPC is a versatile solution for modern power networks, offering both electrical and communication capabilities while maintaining the mechanical and electrical characteristics of conventional phase conductors.

Article Content

What is OPPC Cable? Optical Phase Conductor

OPPC (Optical Phase Conductor) is a specialized aerial power cable that integrates fiber optic units directly into the phase conductors of overhead transmission and distribution lines.

What is OPPC Cable? Optical Phase Conductor

This aerial cable combines fiber optic units within phase conductors, thus having a double function in the phase line and communication. The OPPC

Introduction Construction Outdoor OPPC Cable Optical Phase

Telecommunications: OPPC cables facilitate telecommunications for medium and high voltage power lines, enabling the construction of distribution automation stations in urban and rural

Optical Phase Conductor (OPPC)

OPPC (Optical Phase Conductor) integrates power delivery and high-bandwidth optical communication in a single robust conductor. Ideal for 110 kV and below distribution grids, it reduces installation costs

Optical Phase Conductor

Discover AFL EMEA's Optical Phase Conductor (OPPC) solutions for aerial fibre optic networks. Combining power and data transmission in a single, efficient conductor for utility and telecom

Optical Phase Conductor Overview | PDF | Optical Fiber

Optical Phase Conductor (OPPC) serves as an alternative to Optical Ground Wire (OPGW) in telecommunications when no ground wire exists, designed to mimic the mechanical and electrical

HOHAM CABLE---OPPC,Optical Phase Conductor

OPPC OPPC--OPPC,Optical Phase Conductor Application: OPPC combines the function of overhead phase conductor and fiber cable. The aluminum (or alloy) wires guarantee its good electrical

Optical Fiber Composite Phase Wire (OPPC)

OPPC is a new type of special electrical cable that makes up the unit of fiber in the phase with the function of phase and communication. It is mainly applied in low voltage classes 110kV, urban power

IEC 60793-1-40:2024 | IEC

IEC 60793-1-40:2024 establishes uniform requirements for measuring the attenuation of optical fibre, thereby assisting in the inspection of fibres and cables for commercial purposes. Four methods are

Fiber Optic Cables Manufacturers, Optical Cables Factory

In a customized fiber optic communication solution, we begin with a requirements analysis to understand the specific needs and requirements of our customers.

Optical Phase Conductor OPPC | AFL EMEA

Optical Phase Conductor (OPPC) is used as an alternative telecommunications solution when there is no existing ground wire, meaning Optical Ground Wire

IEC 60794-1-220:2022

IEC 60794-1-220 Standard Overview and Technical Background IEC 60794-1-220:2022, published by the International Electrotechnical Commission (IEC), is a key component of the general

Optical Fiber Composite Phase Wire (OPPC)

In the traditional structure of the phase, add in the fiber unit with the appropriate method, which can become fiber optic phase conductor. Resistant to traction. Mechanical-electrical characteristics

Introduction Construction Outdoor OPPC Cable Optical Phase Conductor

Construction OPPC (Optical Phase Conductor) Cable is an innovative type of optical cable specifically designed for power transmission systems. This cable integrates optical fiber units

All Dielectric Self Supporting Fibre Cable(ADSS)

ADSS cable's full name is All Dielectric Self Supporting Cable, which is also called non-metallic all-dielectric self-supporting fiber optic cable. It is widely used in power communication systems for its

Optical Fiber Composition Phase Conductor (OPPC)

Application Optical Fiber Composition Phase Conductor (OPPC) is the optical cable that compounds the fiber in the phase conductor. OPPC makes full use of the power system's own line resources to avoid

What Is OPPC Cable | Hunan Jiahome

What Is OPPC Cable□ Optical Phase Conductor (OPPC) cable is a specialized type of power line cable that integrates optical fibers into a traditional phase conductor (live wire) used in electrical

The Difference Between OPGW, OPPC and ADSS Optical Cable

Opticalphase Conductor, referred to as OPPC, is a new type of special optical cable for power communication. It is an optical cable that combines optical fiber units into conductors with a

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

