

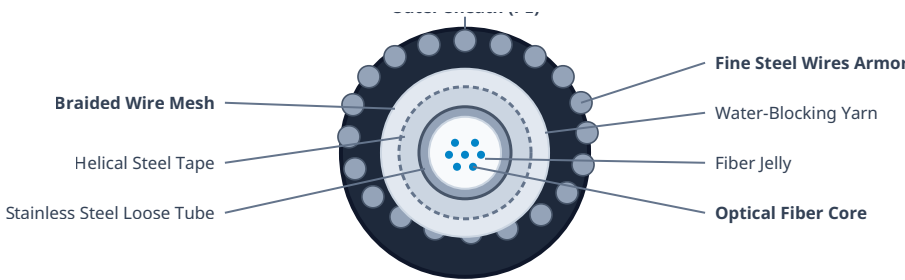
Heavy-Armored Temperature-Sensing Optical Cable for Pipeline Leak Monitoring (SCTG33Y)

Heavy-Armored Pipeline Leak Detection & Temperature Sensing Optical Cable Datasheet

Product Description

The structure of the **SCTG33Y heavy-armored temperature-sensing optical cable for pipeline leak monitoring** is constructed by placing 250µm optical fibers into a seamless stainless steel tube filled with a waterproof compound. The steel tube is longitudinally wrapped with a stainless steel helical tape and a braided wire mesh layer, followed by a double-layer fine round steel wire armor, and finally extruded with a Polyethylene (PE) outer sheath.

Cable Cross-Section & Component Breakdown



Product Features

Fully Insulated & High Protection Structure

Fully insulated design providing high voltage resistance, anti-static discharge, flame retardance, explosion-proof characteristics, and superior physical durability.

Multimode Fiber for Leak Detection

Utilizes high-precision multimode optical fibers specifically optimized for distributed temperature sensing and pipeline leakage detection applications.

Aging & Corrosion Resistant PE Sheath

High-density Polyethylene (PE) outer sheath delivers excellent anti-aging, corrosion-resistant, and wear-resistant properties in underground or harsh environments.

High Crush & Tensile Endurance

Features extraordinary anti-crush and high-tensile strength capabilities, enabling reliable deployment in heavy-pressure pipeline beds.

Triple-Layer Steel Armoring Protection

Combines a stainless steel tube, helical tape with wire braid, plus double-layer fine steel wire stranding for maximum mechanical defense.

Compact Design & Fast Thermal Response

Compact outer diameter and streamlined core structure ensure rapid heat penetration for quick, accurate temperature sensing and leak response.

Technical Parameters

Parameter Description	Technical Specifications
Fiber Type	62.5/125 µm (Multimode)
Operating Temperature Range	Long-Term: -40°C to +85°C Short-Term: -60°C to +120°C
Fiber Core Count	2 - 24 Cores
Cable Outer Diameter	8.5 ± 0.5 mm
Minimum Bending Radius (Static)	10 × Cable Outer Diameter (10D)
Minimum Bending Radius (Dynamic)	20 × Cable Outer Diameter (20D)
Max Allowable Crush Resistance	≥ 5000 N
Max Allowable Tensile Force	≥ 3000 N
Outer Sheath Material	Polyethylene (PE)
Strength Member	SUS304 Stainless Steel Fine Wire Stranding

Parameter Description	Technical Specifications
Central Loose Tube	SUS304 Seamless Stainless Steel Tube
Tube Filling Compound	Special Water-Blocking Optical Fiber Jelly
Optical Fiber Diameter	0.25 mm Colored Optical Fiber
Design Service Life	25 Years

Note: The above data is for reference only. Storage & Operating Temperature Range: -40°C to +70°C.