

Customization Process for Low-Loss PLC Splitter for Oil Pipeline Monitoring



Article Overview

Custom low-loss PLC splitters for oil pipeline monitoring are designed to optimize signal distribution while integrating with PLC-based control and SCADA systems, ensuring reliable, real-time monitoring under harsh environmental conditions.

Overview of PLC Splitters in Pipeline Monitoring

PLC splitters are optical devices that divide a single optical signal into multiple outputs with minimal insertion loss, which is critical for maintaining signal integrity over long distances in pipeline monitoring networks. Low-loss splitters enhance the performance of fiber-optic sensors used for pressure, temperature, and flow monitoring along pipelines, enabling accurate and continuous data acquisition for SCADA systems (Corning) .

Key Steps in Customization

- Define Monitoring Requirements
- Identify the number of monitoring points along the pipeline and the type of sensors (pressure, temperature, flow) to be integrated.
- Determine the required optical power budget to ensure low insertion loss across all splitter outputs (Corning) .
- Select Splitter Type and Configuration
- Choose between 1xN or 2xN splitters depending on the number of sensors and redundancy requirements.
- Decide on the split ratio (e.g., 1:4, 1:8) to balance signal strength and coverage.

Article Content

PLC Splitter and download the loss chart of PLC splitter

A splitter with 1×2 certain ratio configuration means that it has one input and two outputs. There are 1×4 plc splitter, 1×8

Design and optimization of non-uniform 1 × 5 PLC splitter using ...

In this paper, the design and optimization of a non-uniform 1 × 5 PLC splitter are carried out, and the device

PLC Splitter Manufacturing Process

The complete manufacturing process involves four essential stages: waveguide chip

Custom PLC Panel Solutions for Oil & Gas: What You Need to Know

The oil & gas industry operates in some of the most demanding and hazardous environments, requiring automation

PLC Splitter

Description Broadex Technologies" Planar Lightwave Circuit (PLC) splitter is a passive optical power management device that uses

PLC Splitter Manufacturing Technology

The fabrication process is often conducted in cleanroom environments to minimize the risk of contaminants that could

Monitoring and Control Parameters of Fluid Pipeline by Using PLC

This work suggests using Programmable Logic Controller and Internet of Things technology to conduct research and construct a fluid

PLC Splitter Manufacturing Technology

The manufacturing of Planar Lightwave Circuit (PLC) splitters involves several key processes to create precise and

PLC Splitter

The PLC Splitter splits one or two optical signals into multiple output ports and features low insertion loss, high uniformity and low

PLC Splitters

Planar Lightwave Circuit (PLC) Splitters with the following options: 1XN or 2XN, Bare Fiber, Mini-Type, ABS Module, LGX Cassette

Fiber Optic PLC Splitter FAQs

Fiber optic PLC splitters can be classified based on different factors, such as the connectivity, packaging, and splitting ratios: a)

ABS Splitter | Reliable Fiber Optic PLC Splitter Solution

Each ABS splitter undergoes rigorous quality assurance testing, including insertion loss, return loss, and uniformity tests, to ensure

Industrial Control Systems for Oil and Gas | Atlas OT

Atlas OT offers expert solutions and control systems for oil and gas. Contact us and get real-time analytics, natural gas automation

PLC Splitters | OEM Optical Communication Solutions | Corning

These devices enable more effective monitoring and management of optical networks. They are available as components, in our

Pipeline Integrity Monitoring and Leak Detection | SLB

Pipeline integrity monitoring systems SLB's pipeline integrity monitoring systems—part of the Optiq™ fiber-optic solutions

How Does a PLC Splitter Work? An In-Depth Technical Guide

Optical Signal Monitoring Tap splitters enable non-intrusive signal monitoring by dividing a fraction of optical power for

Custom PLC Panel Solutions for Oil & Gas: What You Need to Know

Whether you need panels for drilling, refining, or pipeline monitoring, investing in a high-quality custom solution will

PLC Splitters

2. For devices with connectors, insertion loss will be 0.3dB higher.

FHD® Cassette PLC Splitter Data Sheet | FS

FS PLC splitters come in a full range of 1xN and 2xN models, with a variety of connector options including LC, SC, FC, and ST, as

A comprehensive survey on pipeline monitoring technologies ...

Pipelines are essential infrastructure used to transport resources such as oil, gas, water, and sewage. Efforts should

PLC Splitter: The Ultimate Guide to Efficient Light

A PLC Splitter divides one optical signal into multiple outputs, ensuring reliable, efficient

PLC Splitter Manufacturing Process #bwnfiber #fibersplitter

The manufacturing process of a PLC splitter consists of four key stages: PLC chip

Understanding PLC Splitter Loss: What You Need to Know for FTTH

How to Choose the Right PLC Splitter for Your FTTH Network Choosing the right PLC splitter can avoid fiber splitter

PLC splitter

Splitter is a key component in FTTX and is responsible to distribute the signal from CO to numbers of premises. Planar Lightwave

A compact and low-loss 1×8 optical power splitter using silica-based ...

A 1×16 optical power splitter in polymers using hot-embossing process was reported . This method can obtain high

Design and optimization of non-uniform 1 × 5 PLC splitter using ...

Abstract The non-uniform planar lightwave circuit (PLC) splitter with one primary and multiple signal distribution

What Is The Loss Of Each Port In PLC Splitter?

Understanding the loss characteristics of individual ports in Planar Lightwave Circuit (PLC) splitters is essential for

PASSIVE OPTICAL SPLITTER

Misalignment of the PLC splitter chip and the fiber array may occur due to poor manufacturing precision, the use of low-quality epoxy,

The Definitive Guide to Fiber Optic PLC Splitter in 2022

This type of PLC splitter uses a bare fiber to guide light, which makes it more flexible than other types of PLC splitters.

PLC Splitter Technology: Principles, Performance, and FTTH

Master PLC splitter technology for FTTH networks. Explore working principles, key performance indicators (Insertion

Contact Us

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