



Oil and Gas Solutions

Comprehensive Physical Infrastructure Solutions
for Offshore and Refinery Applications

PANDUIT[®]

Infrastructure Solutions That Address Today's Challenges

The world's appetite for energy grows every day, and oil and gas are still the best options for meeting global demand. Faced with the need to explore in challenging locations, integrate new oil sands and shale capabilities, meet updated safety protocols, and identify new technologies to handle remote environments, energy producers are looking for partners who can help them keep up with changing business conditions and goals.

Panduit plays an important role in the energy value chain. As a global innovator of solutions for connecting, grounding, securing, protecting, identification labeling, and copper and fiber communication systems, our solutions help minimize downtime, improve operational performance, and compress installation times.

Solutions for Harsh Environments

Tomorrow's "new builds" will most likely be located in remote regions of the world: in the deep waters in the Gulf of Mexico or the environmentally hostile arctic terrain of Northern Canada where significant oil sand reserves have been identified.

Consequently, product reliability is critical. Panduit conducts extensive testing to measure product performance in the face of extreme heat, cold, vibration, corrosive agents, salt spray, and high winds. Products meet – and many exceed – the performance standards set by regulatory agencies worldwide. They also are designed for optimized installation and maintenance in harsh environments.

Real time performance information is another important issue. Panduit's high-reliability products support 24x7 network availability, providing the visibility companies need to advance their business.

Safety Is A Top Priority

As drilling technologies become more complex and production goals are pushed higher, safety and preventive maintenance procedures are even more critical.

Panduit is keeping pace with continual product improvements for enhancing safety, reliability, and performance. Our products frequently exceed the standards required by regulatory agencies such as OSHA and their counterparts around the world. Our products are also designed to reduce lost time accidents and enhance equipment and personal safety.



Reduce Installation Time

Taking time out of the installation process is a great benefit, contributing to meeting aggressive construction schedules and project ROI goals.

Panduit solutions are known for patented, time-saving features that reduce the number of installation steps. In remote locations where weather windows can be very tight, even a minor construction delay can result in schedule penalties and revenue delay. In head to head comparisons with competitive products contractors have found Panduit products to be significantly easier and faster to install.

Even our tooling is engineered to speed the installation process.

Global Reach, Local Delivery

More so than other industries, oil and gas energy production is a global business dependent upon a global supply chain.

Panduit's extensive worldwide network of local distributors and regional warehouses allow us to deliver the right solutions when and where they are needed. Having locally based professionals is a significant advantage. As an organization Panduit is very knowledgeable about the local cultures and the various codes and country-specific standards. And, our professionals leverage their global experiences to collaborate on solving unique customer challenges.

If You Route It, Ground It, Connect It,
Protect It or Identify It...

Panduit Can Help You Manage It

1

Stainless Steel
Cable Ties



2

Tools



3

Identification
Systems



4

Power
Connectors



5

Grounding
Connectors



1 2 3 4 5 6 7 8 Offshore



2 3 4



1 2 3 4 5 6 8 9 Refinery



6 Zone Enclosures



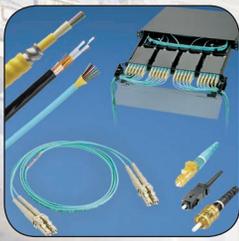
7 Copper Cabling Systems



8 Control Panel



9 Micro Data Center



10 Fiber Optic Cabling Systems



11 Network Security Systems



5 6 7 9 10 11 Control Room

Industry-Leading Solutions for Offshore, Refinery and Control Room Applications

Panduit solutions have distinct engineering and performance advantages in oil and gas environments. With Panduit as a primary source partner, customers can maximize uptime, enhance safety, increase reliability, and have a single point of contact for getting quick answers regarding product usage, installation, and availability.





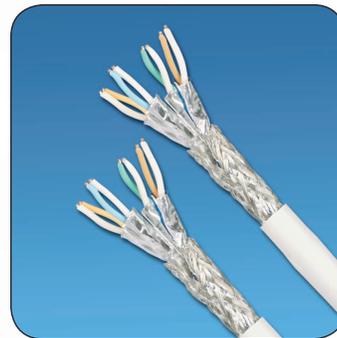
Pan-Steel® Self-Locking Stainless Steel Cable Ties

The Pan-Steel® Super Heavy Cross Section Self-Locking Stainless Steel Cable Tie is a lightweight, flexible alternative to cable cleats for fastening cables to cable tray. The self-locking design speeds installation because no tray modification is required. Total installation costs can be as much as 25% less vs. traditional cleats. The smooth, rounded edge

of Pan-Steel® Cable Ties is considerably safer for installers to handle, and protects against abrasion of the cable jacket/insulation.

Marine Copper Cable

Panduit® TX7000™ marine rated shielded copper cable meets the high bandwidth needs of modern Ethernet communications. A highly durable, flame and oil resistant jacket provides protection for harsh on-ship and off-shore applications, meeting stringent DNV and ABS standards. The shielding also offers superior performance in high EMI environments.



Direct Burial Compression Grounding System

Panduit's unique design offers an alternative to exothermic grounding systems, meeting the higher survivability benchmarks of IEEE 837™-2014 standard. Because there is no open flame involved in the installation process, installations can continue in any weather condition and open-burn permits are not required. Bonds can be visually inspected

on the spot. Field tests show installation speeds are up to 4 times faster than exothermic equivalents. Meets the higher survivability benchmarks of IEEE 837™-2014 standard.



Permanent Identification Solutions

Panduit identification solutions are used with pipes, conduit, cables, and related equipment. Available in many colors and configurations, these fire-resistant systems are manufactured for long-term use in the harsh environments found in oil and gas operations. Known for outstanding durability and legibility, Panduit identification solutions can be embossed, etched, or engraved prior to delivery.

Safety Solutions

Panduit's industry-leading safety offering of lockout/tagout devices, facility signage, and labeling systems serve as the cornerstone of safety programs for the control and identification of all types of hazardous energy systems. These can include electrical, chemical, pneumatic, mechanical, kinetic, and hydraulic applications. Panduit safety solutions are compliant with OSHA, ANSI, and NFPA requirements.





IndustrialNet™ Ethernet Enclosures, Racks, and Accessories

Enclosures are critical components of today's network zone architectures, providing IT and control personnel a reliable convergence point for making network drops to control panels and field devices. Panduit enclosures, racks and assemblies are NEMA 4 rated, pre-engineered solutions for reliable performance in highly demanding operating conditions.



Micro Data Center

Panduit's Micro Data Center is an ideal fit for all your communication and monitoring equipment. A Micro Data Center houses the servers, switches, patch panels, cabling, and other critical components needed to manage a process control application. The small footprint makes it easy to locate for quick access.

Global Approvals and Certifications



Russian Maritime Register of Shipping



American Bureau of Shipping



Military Specification



US Coast Guard



Lloyd's Register of Shipping



German Lloyd's



Industrial Automation Solutions

Panduit is uniquely qualified to understand the complexities of plant-level networks and controls, from monitoring production processes to optimizing pathway design. Panduit's Industrial Automation Solutions ease the deployment of industrial networks and automation control systems. Integrated and optimized architectures, solutions, and services help customers achieve business objectives such as accelerated convergence of IT and the factory floor, quicker deployment times, and broader risk management.

Panel Systems

Our broad line of control panel products improve reliability, security, and safety at lower costs of ownership. They are designed to meet the challenges of tight, hard to reach access areas and minimize Electromagnetic Interference (EMI) noise inside the panel -- while lowering the panel footprint and cost. Outstanding visual identification features enhance maintenance, troubleshooting, and accidental shutdowns.

Micro Data Centers

As more IT equipment is deployed in industrial spaces rather than corporate offices, a new breed of products is required. The Panduit Micro Data Center addresses the need for seamless integration ensuring that the linkage between industrial communication and corporate network systems is secure, environmentally protected, and optimized to speed diagnostics and problem solving, while reserving the ability to isolate the networks when security threats to production arise. Our designs optimize performance when space and cable routing is challenging or multiple sizes and mounting options are required.

Data Center Solutions

Panduit Intelligent Data Center Solutions encompass data center advisory services, intelligent software and hardware, energy efficient cabinets, pre-configured infrastructures, physical infrastructure foundation, and high-speed data transport (HSDT) copper and fiber optic cabling. Our solutions are modular, scalable, and agile, fully supporting state-of-the-art network architectures today and into the future.

Best practice methodologies are supported in four key areas:

- Visibility and control for managing and automating real-time data processes and documentation
- Convergence of new technologies and high-speed data applications
- Operational efficiencies through process improvement and IT initiatives, such as reduced cooling requirements through the use of energy efficient data cabinets
- Capacity management for greater real estate utilization





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