



**PANDUIT**<sup>®</sup>

# Simplifying Robust Industrial Network and IoT Deployment

INDUSTRIAL NETWORK INFRASTRUCTURE

A reliable end-to-end network physical layer infrastructure from the enterprise to the edge

There is a rapid influx of smart equipment and connected devices that communicate on an industrial Ethernet network which enables manufacturers to understand the performance of machines and processes like never before. Yet equally important to *what* is connected, is *how* devices are connected. New technologies enable manufacturers to manage infrastructure, deploy devices and share information in new ways.

Panduit<sup>®</sup> Industrial Network Infrastructure and IoT solutions adhere to network architectures such as Converged Plantwide Ethernet (CPwE) to provide a reliable end-to-end network physical layer infrastructure.

With strategic alliance partners like Cisco<sup>®</sup> and Rockwell Automation<sup>®</sup>, we are committed to enhancing technical leadership through active participation in standards groups, coalitions, and eco-systems. Panduit actively adds business partner programs, training, and specification tools to broaden the scope and impact of Industrial IoT installations.

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The Internet of Things (IoT)

IoT drives the need to securely connect the enterprise to a multitude of wired and wireless points on the plant floor.

Converged Plant-wide Ethernet (CPwE)

A resilient plant-wide physical network architecture serves a crucial role to achieve overall plant productivity.

IntraVUE<sup>™</sup> Software

Identifying information critical to the Industrial Ethernet Infrastructure to pro-actively improve uptime and overall network performance.

Assess, design, deploy and manage a network infrastructure built around IT and OT physical layer standards that assures fast, repeatable installations with Panduit Industrial Network Infrastructure solutions.

[www.panduit.com/ia](http://www.panduit.com/ia)

[www.panduit.com/iaicatalog](http://www.panduit.com/iaicatalog)

Panduit® industrial building block solutions, tools and services simplify network deployment for better equipment optimization and broader risk management.

## Connecting Enterprise to the Plant Floor

Optimize industrial communication and linkage from the enterprise throughout the plant floor by maintaining network uptime, segregating networks, managing network security, visualizing network assets and proactively reporting network information.

The Micro Data Center (MDC) allows deployment of active equipment while protecting the critical physical media which makes up the industrial network and computing system. The MDC provides a secure and protected environment for enterprise and plant floor networks.

IntraVUE™ software provides visibility into all devices, speeds documentation and deployment, and provides advanced analytics to optimize ongoing network performance.

Learn how to enable rapid installation of switch, server and storage devices at [www.panduit.com/mdc](http://www.panduit.com/mdc)

## Distributing Ethernet Throughout the Plant Floor

A simple and consistent network infrastructure that distributes Ethernet beyond the control room and throughout the plant floor improves Overall Equipment Effectiveness (OEE), increases network visibility and resiliency, and removes questionable required expansion of a switch cabinet. A consistent network also incorporates active and passive equipment architecture, localizes network traffic and reduces network redundancy and cost.

The Network Zone System (NZS) and Pre-Configured Industrial Distribution Frame (IDF) commonly found on the plant floor, deploy plant-wide EtherNet/IP™ networks from machine-to-machine.

Learn how to simplify planning for an IoT information enabled manufacturing environment.

Manufacturing Network Fabric Maturity Model White Paper at [www.panduit.com/networkfabric](http://www.panduit.com/networkfabric)

## Connecting Machines and Devices to Plant Floor Architecture

Systems throughout the factory floor are more connected which result in consistent Ethernet node growth. By utilizing best practices and guidelines, you can confidently deploy Ethernet networks in a control panel environment which results in greater performance, less susceptibility to EMI noise and enhanced network security as well as space optimization, noise mitigation, network security, environmental protection and safety. Data access ports prevent unintentional control panel disruption by unauthorized personnel security.

For configuration drawings and reference architecture guides at [www.panduit.com/pcds](http://www.panduit.com/pcds)

## Deploying Ethernet on Machine

Implementing the appropriate cabling infrastructure from control panel to machine, that addresses effective cable routing, strain relief and environmental protection, maximizes plant uptime and ensures lasting reliability. A robust cabling system consists of industrial copper and fiber cabling to maximize connectivity uptime while reducing operating costs. Hardened cable also survives from ocean floor and caustic environments.

Physical Infrastructure for a Resilient CPwE Architecture Technical Paper at [www.panduit.com/pcds](http://www.panduit.com/pcds)

## Strengthening the Network from the Ground Up

As more industrial operations are linked to corporate networks, connectivity is pushed to devices that increase the amount of network access points. Panduit offers solutions that manage and strengthen the facility infrastructure by implementing lockout/tagout products and tools to protect employees and infrastructure from hazards created by energized systems. Grounding and bonding systems reduce intermittent failures and personal hazards while labeling and color-coding speeds troubleshooting network connections. Proper cable identification and safety signage help maintain a safe working environment and reduce risk.

Learn more about reducing downtime and protecting network assets at [www.panduit.com/ia](http://www.panduit.com/ia)

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Panduit develops and implements physical infrastructure solutions for global deployment by fortune 500 companies.

Our application expertise helps assess network infrastructures current state and future readiness, deliver comprehensive standards, compliant drawings and manage the deployment of industrial physical infrastructures.

Panduit IoT solutions simplify deployment of application specific kits that collect environmental, asset condition, and physical network performance data, applied analytics and provides insights that help customers make higher value business decisions.

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