



# Plexus PowerNet™

The gigabit coaxial cable network that delivers data and power to your tunneling operation



- **High-speed gigabit network uses coaxial cable to deliver data and power**
- **Wi-Fi voice communications and enabled devices**
- **Simple to adapt into existing infrastructure**
- **Easy to install, advance and maintain**

The Plexus PowerNet™ networking system delivers high-speed, digital communications via coaxial cable that provides PoE+ power to Wireless Access Points (WAPs), cameras and any other IP-based device. The system is easy to install and can be maintained by existing personnel – no special training is required!

As operational demand for real-time data continues to grow, Matrix works with all types of mining and tunneling operations to provide the most cost-effective networking solution.

The Plexus PowerNet system can be quickly integrated into an existing infrastructure.

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## FEATURES & BENEFITS

- The Maestro network can be extended up to 4,900 feet without being repowered. With added power points, it has endless range.
- Data can reach up to 500 Mbps, which allows cameras, VoIP phones and Wi-Fi hot spots to be added.
- If the system cable breaks due to rock fall, Maestro is easy to repair with existing personnel.
- Plexus delivers exceptional performance combined with Matrix service and support.



## THE DIGITAL MINE

The Digital Mine concept, which also applies to tunneling operations, is based on the capture and analysis of data to help increase production, reduce costs and enhance worker safety.

## THE SIMPLER SOLUTION

Plexus PowerNet provides a robust, easy-to-install and advance single cable solution for network connectivity.

EZ Advance Nodes provide an easy way to terminate, troubleshoot and deploy standards-based IP devices from Plexus PowerNet's embedded network switch.



Matrix Design Group is an authorized distributor of Maestro's Plexus PowerNet in the United States.

Our highly experienced team of mine network professionals can guide you through planning, installation and maintenance of this system.

### Power

Easy-to-add DC power at any Node. A single power supply will power 8-10 Wireless Access Points (WAPs), reducing total infrastructure cost and time.

### Connect

Connect directly to a level network switch. Combine power and network connectivity onto a single cable. Each node provides a 4 port PoE+ network switch in managed or unmanaged mode.

### Advance

Add splitters and additional nodes. Install, extend, terminate and maintain can be done by in-house electrical trades or development miners.

### Repair

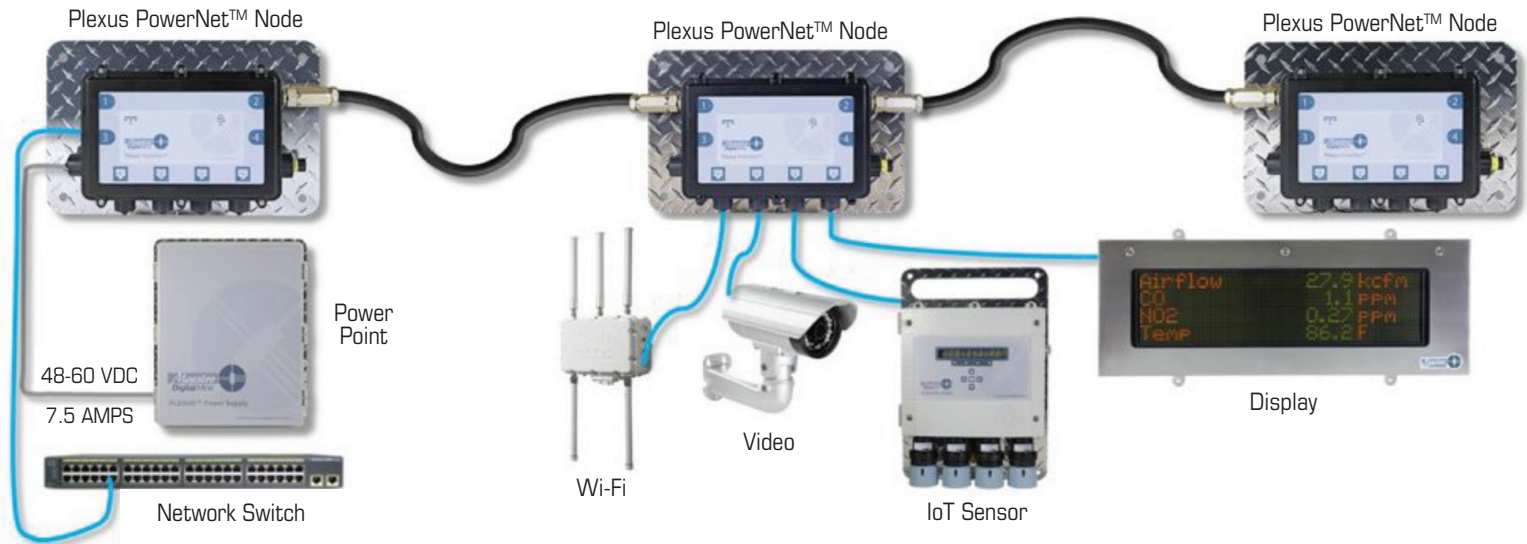
No skilled labor required to troubleshoot or replace components, saving time and increasing production rates.





## NODE OVERVIEW

The core of the network are the Plexus PowerNet™ nodes, each of which has four PoE+ ports and provides power to the wireless access points or end-point devices. The nodes also have a USB port that can allow an easy upgrade of firmware and backup of configurations. Simple port diagnostics on the devices make it easy to see power consumption, voltage and data rates.



Maximum 4,900 FT (1,590 M) between Power Points. Can handle 8-10 Wireless Access Points (WAP).  
Add new power points and network length is endless!

## APPLICATIONS

- Voice over IP (VoIP)
- Telemetry to drills, loaders and support equipment
- Support for Short Interval Control and connectivity to tablet, smart devices
- IoT sensors such as environmental or seismic
- Autonomous and tele-remote vehicles
- Connected worker video, voice and augmented reality
- Asset tracking
- PoE-based IP cameras for paste fill
- PLC connectivity



Plexus PowerNet™ is currently installed and expanding at mines and tunnels in the United States, Canada, Spain and Finland. The system, which can be used with or without a fiber-optic network, is designed for the quick deployment of high-quality communication.

**PLEXUS POWERNET™ HARDWARE SPECIFICATIONS****4 PoE+ Ports**

PoE	802.3af, 12.95 W typical (15.4 W maximum)
PoE+	802.3at, 25.50 W typical (30.0 W maximum)
	4 x RJ-45 Circular bayonet receptacle (IP67 – dust tight, waterproof) for 10 BASE-T / 100 BASE-TX / 1000 BASE-T Ethernet
	Auto medium dependent interface (MDI) and MDI crossover (MDI-X)
	Auto negotiate
	1 x USB Type-A console port / configuration / firmware update (IP67)
	1 x DC Bi-directional power receptacle (15A Max. insertion) (IP67)
	1 x Coaxial bulkhead port (Type-A, Type-C) or
	2 x Coaxial bulkhead ports (Type-B) (IP) connectivity onto a single c

**LAYER 2 SPECIFICATIONS**

<b>LEDs</b>	DC power, health, link/activity, PoE-enabled
<b>VLAN</b>	Port-based and 802.1Q tag-based VLANs
<b>IPv4</b>	Protocol-based VLAN
<b>IPv4 Applications</b>	Management VLAN
<b>LLDP</b>	Link layer discovery protocol

**SOFTWARE MANAGEMENT SPECIFICATIONS**

<b>Web User Interface</b>	Built-in web user interface for easy browser-based configuration (HTTP) Administrator and user access levels Diagnostics, port up/down, voltage, amperage
<b>SNMP</b>	Simple Network Management Protocol – Version 3
<b>RADIUS</b>	RADIUS client
<b>SSH</b>	Secure Shell Protocol
<b>SolarWinds®</b>	NCM and NPM compatibility
<b>Other Management</b>	Single IP management Dynamic Host Configuration Protocol (DHCP) client VLAN and Trunk configuration

**ENVIRONMENTAL SPECIFICATIONS**

<b>Enclosure Dimensions</b>	10.787" x 6.811" x 3.937" (273.99 mm x 172.99 mm x 100.00 mm) (length x width x height)
<b>Enclosure Rating</b>	IP67, NEMA 1,2,4,4X,12,13
<b>Weight</b>	6 lbs (2.7kg)
<b>Certification</b>	CE Mark, FCC Part 15
<b>Operating Temperature</b>	+14°F to 122°F (-10°C to +50°C)
<b>Voltage Range</b>	20 – 60 VDC

**PRODUCT WARRANTY**

	Two-year limited lifetime warranty with return to factory replacement
	Two-year telephone support and software updates for the warranty term

Information and specifications contained in this document are subject to change without notice.

Plexus PowerNet™ is a trademark of  
Maestro Digital Mine, Sudbury, Ontario, Canada.

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