N-Connex

Networks for harsh environments

nlt
Northern Light Technologies

- Plug n' play, high speed modular network
- Pre-terminated fiber eliminates splicing underground
- Rapid deployment and easily maintained
- Turnkey data and voice communications solution
- Data networking via a gigabit backbone
- Monitoring and control systems
- Video surveillance and monitoring
- Personnel and vehicle tracking
- Emergency management and alarms
- Ventilation optimisation
- Install the modules you need as required
- Connect and future proof your mine or tunnel

Distribution Module

The Distribution module is the core N-Connex component that delivers a high reliability, Gigabit Ethernet network. It supports many advanced network standards to optimize network performance, ease maintenance issues and secure network safety.
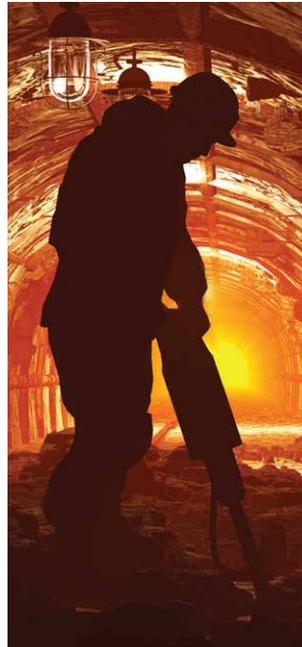
With the inclusion of eight managed PoE ports, two Non-PoE Ports and four Single Mode Fibre Ports it enables a range of solutions and network topologies. When combined with the N-Connex Bolt Access Points strong and reliable WiFi coverage in underground mines, tunnels and heavy industrial facilities is achievable.

The Distribution X module provides support for a 10 Gigabit fibre backbone for the most demanding data requirements. The Distribution X also includes an additional two (2) non PoE ports and is fully compatible with the other N-Connex modules.

Key Features

- Eight (8) 10/100/1000 Mbps RJ45 POE Ports
- Two (2) 10/100/1000 Mbps RJ45 Non-POE Ports
- Four (4) Fibre Optic Single Mode Ports
- Total PoE budget of 200W at 25°C or 160W at 40°C
- 52 Gbps Switching Capacity
- Optional Battery Backup Power
- Network Management Capabilities
- IP67 protected enclosure

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Edge Module

The Edge module provides connectivity to a Gigabit Ethernet backbone. The standard module includes six managed PoE ports to enable a range of solutions. Optionally, the Edge can include two Single Mode fibre ports. Combined with the N-Connex Bolt Access Point, strong and reliable WiFi coverage can be achieved in underground mines, tunnels and heavy industrial facilities.

The Edge module supports many advanced network standards to optimise network performance, ease maintenance issues and secure network safety. The Edge and Distribution modules can work concurrently to provide large network topologies and solutions.

Key Features

- Six (6) 10/100/1000 Mbps RJ45 POE Ports
- Two (2) Fibre Optic Single Mode Ports (comes with NC0500F series)
- IEEE 802.3at 30W PoE, Total PoE budget of 65W
- Support L2+ Switching features
- Support for Spanning Tree STP (802.1d) and RSTP (802.1w)
- 52 Gbps Switching Capacity
- Optional Battery Backup Power
- Network Management Capabilities
- IP67 protected enclosure

Power Module

The Power Module provides power to the Distribution Module of the N-Connex system. The Power Module connects to a single phase 110-240 VAC source and supplies an output load of 48 VDC at approximately 5 Amps.

Adding the optional (recommended) Battery Module will provide the Power Module with an Uninterrupted Power Supply (UPS) function. The Power Module will also provide a dedicated connection for the Battery Module.

Key Features

- Selectable AC Input Voltage 110 / 240 VAC, 47 ÷ 63 Hz
- Total Power Output of 200W at 25°C
- Status indicators
- IP67 protected enclosure
- UPS Functionality (optional)
- Up to 8 hours backup with the optional Battery Module
- Standalone or quick-fit rail mounting

Battery Module

The Battery Module is designed specifically to provide backup power when the main 120/240 VAC power source is shut down. The Battery Module connects to either the Power or Edge Modules, to provide this backup functionality.

The Battery Module will provide 48VDC and will typically last for 8 hours or more. The actual time is dependent on the overall load, which is determined by the number and type of PoE devices connected to the module.

Key Features

- Nominal 48 VDC to support active PoE
- Status indicator
- Vented, aluminum enclosure provides durability and efficient thermal management
- Recharges automatically via the Power or Edge Modules
- Weatherproof IP67 enclosure
- Up to 8 hours backup

Alarm Module

The Alarm module provides an emergency warning solution for the N-Connex Network. It features a high intensity strobe light, a 110db siren and an illuminated emergency pushbutton. The module is powered by PoE and is designed to be connected to N-Connex Distribution or Edge modules via CAT6 cables. Combined with NLT Ethernet extenders, it may be positioned up to 300m away from the Edge or Distribution modules.

Key Features

- Remote trigger via Digital Mine or Modbus/TCP
- Local trigger via illuminated push button
- Weatherproof IP67 enclosure
- 110dB siren and high intensity strobe
- Compatible with third party PoE equipment

Evacuation Module

The Evacuation module is an enhanced Alarm module that has similar functionality but includes an additional yellow/amber strobe and siren arrangement. This second strobe/siren can be used for warning, or testing purposes leaving the primary red alarm/strobe to be used for true emergencies. Features include a mute button so that the sirens can be momentarily muted to allow for voice communications.

Take the smarter, integrated approach to your mine's connectivity.

Bolt Module

N-Connex Bolt is a compact 802.11, 2.4 GHz outdoor and underground wireless access point. The bolt has an N-type connector enabling the use of many industry standard outdoor antenna options. It is powered by Active PoE for simplified deployment.

Also available

- Telephone Module
- WiFi Bridge Module
- and more...

Control and I/O Modules

The monitoring and control functions are performed by a variety of modules to suit the specific application. The Control module includes a small PLC while the Analog I/O and Digital I/O modules have a range of Digital and Analog inputs and outputs that are easily accessed in the modified N-Connex enclosure.
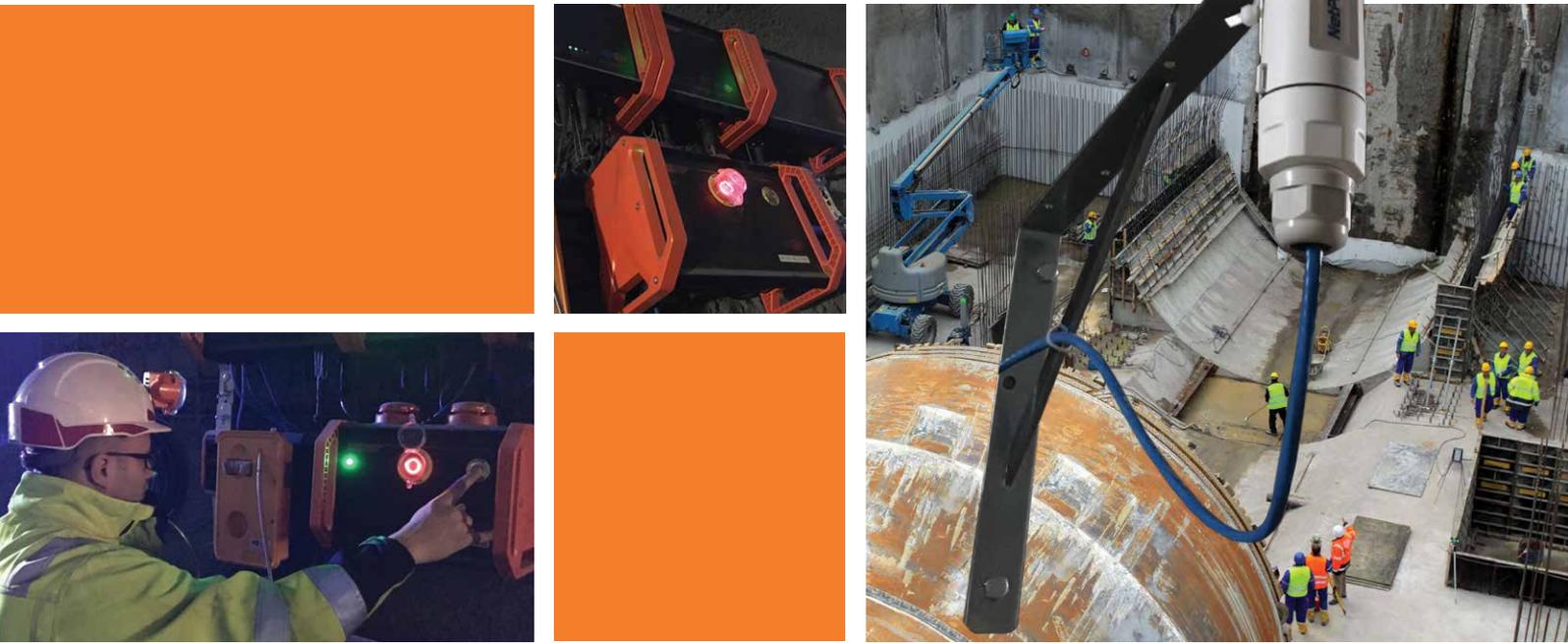
N-Connex

N-Connex is Northern Light Technologies (NLT) award winning rugged, modular, IP67 rated networking solution for harsh environments.

From underground hard rock mines to process plants, from tunnels to heavy industry, N-Connex will provide a fit for purpose WiFi and Ethernet solution like no other. As your demand for data, communications and IoT grows, N-Connex modules ensure your network will grow with you.

Modules

- Distribution
- Distribution X
- Power
- Battery
- Control
- Analog I/O
- Digital I/O
- Edge
- Alarm
- Evacuation
- Phone
- Bolt

N-Connex enables a range of solutions that make use of WiFi (802.11) and Ethernet connectivity.

Choose the functions and network configuration that meet your needs. Additional modules can easily be added to an existing installation to support growth.

Our award winning design makes installation and maintenance easy. The modules hook easily onto an expandable custom rail system and then lock in place using a thumb screw. Units can also be mounted in a stand-alone configuration.

N-Connex modules simply 'plug & play' using Power over Ethernet (PoE) and pre-terminated CAT6 Ethernet and fibre cables.

Solutions include

- Voice communications
- High speed data communications
- Control and automation
- Asset tracking
- Video surveillance
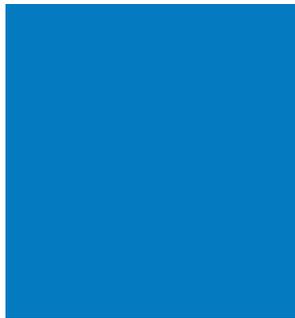- Condition monitoring
- and more

Northern Light Technologies

NLT is a proud industry expert in the design and installation of flexible communication, networking, monitoring and tracking systems for the underground mining and tunnelling industries. Our solutions are used every day on roadways, subways, railways, mines, hydro and other harsh industries. N-Connex is simple, reliable and rugged.

Our engineers will work with you to design a solution that's based on your individual needs and requirements – we offer the industry's most reliable and durable communication solutions. The goal for every project is to help maximize the safety, productivity and profitability for our customers.

NLT can also provide full turn-key solutions to cover voice communications, tracking and visualisation solutions. Our software package is powerful, but user friendly designed for monitoring environmental conditions, emergency management and control functionality. N-Connex is the backbone that enables these proven solutions.

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