NT24k®-16M12-POE Industrial Ethernet Switch

N-Tron® Networking Series

red lion®

▶▶▶ Industrial Managed Gigabit PoE+ IP67 Switch

Red Lion's N-Tron® series NT24k®-16M12-POE IP67 managed Gigabit Ethernet switch provides a rugged, dust proof and water resistant enclosure with sixteen 10/100/1000Base-T(X) M12 X-coded ports to create a reliable and secure network capable of delivering up to 30 Watts of power per port to connected PoE capable devices.

The versatile NT24k-16M12-POE managed switch features 16 M12 X-Code Gigabit copper ports and is housed in a dust proof and water resistant IP67-rated enclosure with redundant 22-49 VDC power inputs. Designed to handle the most demanding environments, the NT24k-16M12-POE offers wire-speed throughput, high shock and vibration tolerance and a wide -40° to 80°C operating temperature range. Rugged, reliable and easy to use, the NT24k-16M12-POE switch offers a 240 Watt PoE budget that can be allocated to any of its 16 ports, up to 30 Watts per port. IGMP auto-configuration, IEEE 802.1x with RADIUS remote server authentication and N-Ring™ fast healing ring technology ensure quick deployment and robust secure network communications. The NT24k-16M12-POE is designed to provide reliable operation in railway and other industrial applications subject to shock, vibration and other extreme conditions. Models with bypass relay ports enable data to continue to flow even in the event of a power outage, making this an ideal choice for rail applications.

APPLICATIONS

- > Rail/Transportation
- > Manufacturing
- > Oil & Gas
- > Alternative Energy
- > Water/Wastewater

PRODUCT HIGHLIGHTS

- > IEEE 802.3af/at (30 W per port/ 240 W per switch)
- > Secure M12 Copper Ports
- > Smart Plug-and-Play Operation
- > 22 to 49 VDC Redundant Power Inputs
- > -40° to 80°C Wide Operating Temperature
- > Bypass Relay Port Options
- > Robust Remote Monitoring
- > N-Ring & N-Link™ Network Ring Technology

IEEE 1588v2 PTP OPTIONS

- • Boundary Clock
- • Transparent Clock

IEEE 1588v2 applications include
- • Coordinated motion control
- • Time-stamped data logging
- • Time-stamped fault detection

PTP Models & Upgrade Kit Available

FEATURES & BENEFITS

- > 16 M12 Copper Ports
  - • Sixteen 10/100/1000Base-T(X) copper M12 X-Code ports
- > Redundant 22 to 49 VDC Power Inputs
  - • Boosts power to meet PoE+ output requirements
- > IEEE 802.3af/at PoE Output
  - • 240 Watt PoE budget configurable across all 16 ports, up to 30 Watts per port
- > Bypass relay model
  - • Bypass relay port pairs (2 pairs) allow network traffic to continue to flow through the switch bypass ports in the event of a power outage

- > N-View™ monitoring technology provides remote monitoring and firmware management
- > Extended Environmental Specifications
  - • -40° to 80°C operating temperature range
  - • > 2M hours MTBF
  - • UL/cUL: Class I, Div. 2 Groups A, B, C and D
- > Plug-and-Play Operation:
  - • IGMP auto-configuration
  - • MDIX auto-sensing cable
  - • Simple network ring configuration
  - • Backup and restore via recovery card or XML configuration file

industrial networking

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EN50155

FC

CE

PG

RoHS compliant

EtherNet/IP

FEATURES & BENEFITS (CONT.)

> Fully Managed Features Include:
  - SSH/SSL/HTTPS
  - Jumbo frame support
  - SNMP v1, v2, v3
  - Web browser management
  - Detailed ring map and fault location charting
  - RSTP - 802.1d, 802.1w, 802.1D
  - Trunking and port mirroring
  - 802.1Q tag VLAN and port VLAN
  - IEEE 802.1x with RADIUS remote server authentication
  - DHCP Server, Option 82 relay, Option 61, IP fallback

- Port Security – MAC address based
- 802.1p QoS, port QoS and DSCP
- Event Log/Syslog
- SNTP (Simple Network Time Protocol)
- IEEE 1588v2 (PTP) models available
- Multi-Member N-Ring technology with ~30ms healing
- N-Link redundant ring technology
- N-View™ monitoring and firmware management technology
- EtherNet/IP™ CIP™ messaging

SPECIFICATIONS

SWITCH PROPERTIES
Operation: Managed
IP67-rated hardened metal enclosure
    Dustproof
    Protection against low/high pressure water jets
    Safe for temporary immersion in water
Number of MAC Addresses: 16,000
IEEE Compliance: 802.3, 802.3u, 802.3ab, 802.3x, 802.3af/at, 802.1d/D/w, 802.1p, 802.1Q, 802.1x
IEEE 1588v2 Software-Based Option
Latency (Typical): 1.6 µs
Switching Method: Store-and-Forward
PoE Budget: Configurable up to 240 Watts
    Up to 30 Watts per port (25.5 at the PD)
LED Status Indicators
Onboard Temperature Sensor
Supports Full/Half Duplex Operation
Maximum Throughput: Up to 32 Gb/s
MDIX Auto Sensing Cable
Auto Sensing Speed and Flow Control
Communications: Full Wire Speed
MTBF: >2 million hours
Bypass relay connection (model specific)
Optional recovery device

POWER INPUT
Input Voltage: 22-49 VDC
Standard Model Steady Input Current: 11.5A @ 24VDC
    Inrush: 64.2 A/0.044 ms @ 24VDC
    BTU 123 (with 240 Watt PoE output)
Bypass Relay Model Steady Input Current: 11.6A @ 24VDC
    Inrush: 64.2A/0.044ms @ 24VDC
    BTU 131 (with 240 Watt PoE output)

X-code M12

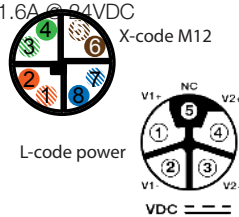L-code power

CONNECTORS
10/100/1000BASE-T: Sixteen (16) M12 X-Code connectors (wiring shown at right)
    ESD and surge protection diodes on all copper ports
Configuration Port: One (1) USB Type B

NETWORK MEDIA
10Base-T: ≥ CAT3 cable
100Base-TX: ≥ CAT5 cable
1000Base-T: ≥ CAT5e cable

RECOMMENDED WIRING CLEARANCE
Front: 4" (10.16 cm)

ENVIRONMENTAL
Operating Temperature: -40°C to 80°C
Storage Temperature: -40°C to 85°C
Operating Humidity: 10% to 95% (non condensing)
Operating Altitude: 0 to 10,000 ft.
Shock: 200 g @ 10 ms (bulkhead mounted)
Vibration: 50 g @ 5-200 Hz, Triaxial (bulkhead mounted)

CERTIFICATION & COMPLIANCE
Product Safety:
    ANSI/ISA-12.12.01-2015 - Nonincendive Electrical Equipment for Use in Class I and II, Division 2 and Class III, Divisions 1 and 2 Hazardous (Classified) Locations, Groups A, B, C and D Hazardous Locations
UL 61010-1 Edition 3 - Revision Date 2016/04/29
CAN/CSA C22.2 No. 213-16 - Nonincendive Electrical Equipment for Use in Class I and II, Division 2 and Class III, Divisions 1 and 2 Hazardous (Classified) Locations, Groups A, B, C and D Hazardous Locations
CSA C22.2 NO. 61010-1-12
Emissions:
    FCC 47 CFR Part 15, Radio Frequency Devices, Subpart B, ANSI C63.4-2014; ISED Canada ICES-003 Issue 6, EN 55011, EN 61000-3-2, EN61000-3-3, EN 55032
Immunity:
    EN 55024, IEC 61000-4-2 (ESD), IEC 61000-4-3 (RFAM), IEC 61000-4-4 (EFT), IEC 61000-4-5 (SURGE), IEC 61000-4-6 (RFCM), IEC 61000-4-11 (VDI)
Rail:
    EN 50155, EN 50121, EN 61373 and EN 45545-2
Designed to Comply with:
    IEEE 1613 (Electric Utility Substations), NEMA TS1/TS2 (Traffic Control)
Other:
    EMC Directive 2014/30/EU; LV Directive 2014/35/EU, GOST-R, RoHS Compliant

MECHANICAL
Case Dimensions:
    Height: 5.90" (14.99 cm)
    Width: 12.84" (32.61 cm)
    Depth: 3.19" (8.10 cm)
    Depth with handles: 3.60" (9.14 cm)
Weight: 5.5 lbs (2.49kg)
Mount: Bulkhead

WARRANTY
3 Years on Design and Manufacturing Defects

ORDERING GUIDE

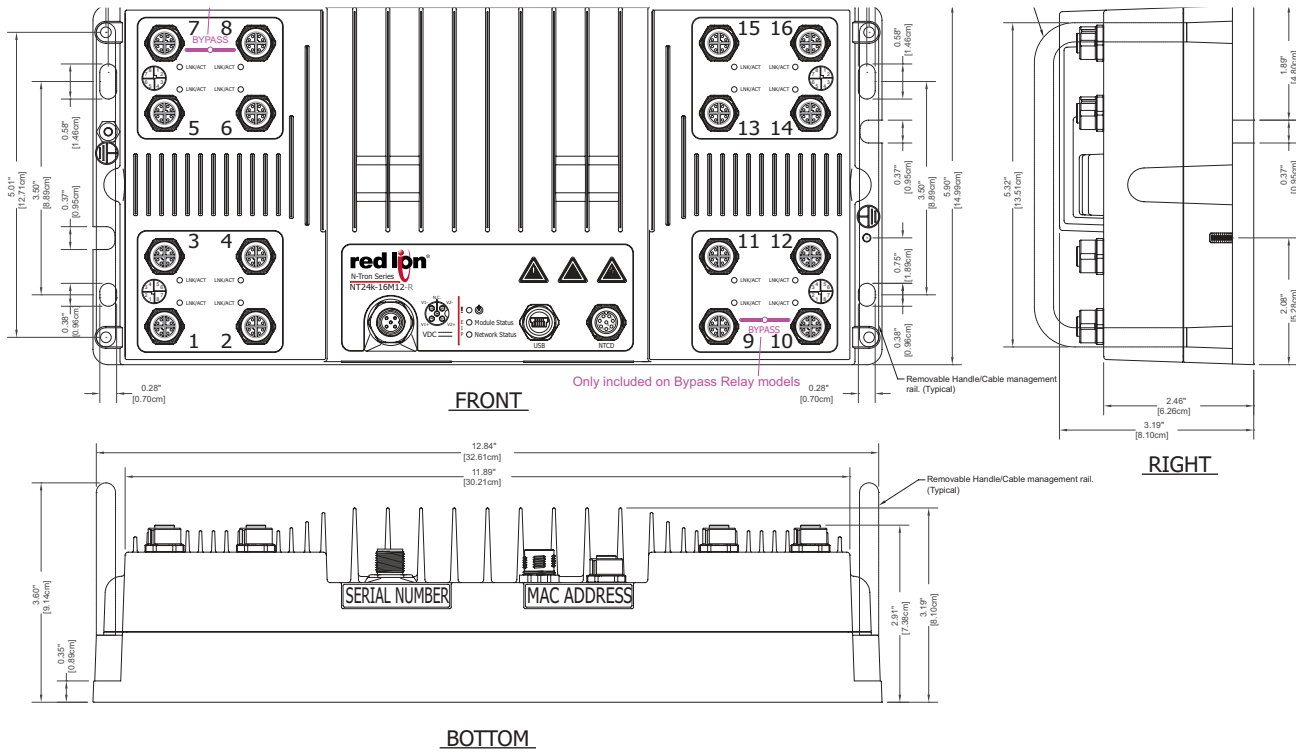| PART NUMBER	DESCRIPTION
NT24K-16M12-POE	IP67 rated 16-Port Gigabit Managed PoE+ Industrial Ethernet Switch with M12 8-pin X-coded female connectors (Max 240W PoE+ Load)
NT24K-16M12-POE-PT	IP67 rated 16-Port Gigabit Managed PoE+ Industrial Ethernet Switch with M12 8-pin X-coded female connectors (Max 240W PoE+ Load), PTP Enabled
NT24K-16M12-POE-R	IP67 rated 16-Port Gigabit Managed PoE+ Industrial Ethernet Switch with M12 8-pin X-coded female connectors (Max 240W PoE+ Load), with bypass relay
NT24K-16M12-POE-R-PT	IP67 rated 16-Port Gigabit Managed PoE+ Industrial Ethernet Switch with M12 8-pin X-coded female connectors (Max 240W PoE+ Load), with bypass relay, PTP Enabled
NTCD-CFG-M12	NT24k Configuration Recovery Device, M12
NTPS-24-20	DIN-Rail Power Supply 20 Amp @ 24 VDC
NTPS-48-10	DIN-Rail Power Supply 10 Amp @ 48 VDC
NT24K-KIT-PTP	NT24k Upgrade License to Enable IEEE 1588/PTP on Non-PT NT24k switches

CABLE ACCESSORIES ORDERING GUIDE

PART NUMBER	DESCRIPTION
Ethernet Cables; XXX=Cable Length*	
CAT5E-XM12-RJ45-XXX	Gigabit Shielded CAT5e Cable with X-Code Straight M12 to RJ45, XXXft
CAT5E-XM12-XM12-XXX	Gigabit Shielded CAT5e Cable with X-Code Straight M12 to X-Code Straight M12, XXXft
CAT5E-XM12-XAM12-XXX	Gigabit Shielded CAT5e Cable with X-Code Straight M12 to X-Code 115deg Angle M12, XXXft
CAT5E-XAM12-RJ45-XXX	Gigabit Shielded CAT5e Cable with X-Code 115deg Angle M12 to RJ45, XXXft
CAT5E-XAM12-XAM12-XXX	Gigabit Shielded CAT5e Cable with X-Code 115deg Angle M12 to X-Code 115deg Angle M12, XXXft
Ethernet Connectors	
CONN-M12-XCODE-STR-1	X-Code M12 Straight Data Connector, 8-pin, Pack of 1
CONN-M12-XCODE-STR-4	X-Code M12 Straight Data Connector, 8-pin, Pack of 4
CONN-M12-XCODE-STR-8	X-Code M12 Straight Data Connector, 8-pin, Pack of 8
CONN-M12-XCODE-ANG-1	X-Code M12 115deg Angled Data Connector, 8-pin, Pack of 1
CONN-M12-XCODE-ANG-4	X-Code M12 115deg Angled Data Connector, 8-pin, Pack of 4
CONN-M12-XCODE-ANG-8	X-Code M12 115deg Angled Data Connector, 8-pin, Pack of 8
Power Cables and Connectors; XXX= Cable Length**	
PWR-M12-L-XXX	Power Cable, 4-Conductor 14AWG, L-Code Straight M12 to bare end, XXXft
CBL-4C-14G-XXX	Power Cable, 4 Conductor 14AWG, W/ 4 Crimps, For Use with L-Code Connector, XXXft
PWR-M12-L-CRM	M12 L-Code Connector with 1M and 4F Crimps
USB Cables	
USBA-M12	6.5' USB Type A to M12 Mini-USB Type B CABLE

*Available category cable lengths in feet: 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21, 22, 23, 24, 25, 50, 75, 100, 150, 200, 250, 300, 328

**Available power cable lengths in feet: 5, 10, 15, 20, 25, 30, 40, 50, 60, 70, 80, 90, 100

DIMENSIONS

FRONT

Only included on Bypass Relay models

Removable Handle/Cable management rail. (Typical)

RIGHT

BOTTOM

Removable Handle/Cable management rail. (Typical)

SERIAL NUMBER

MAC ADDRESS

All specifications are subject to change. Consult the company website for more information.

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As the global experts in communication, monitoring and control for industrial automation and networking, Red Lion has been delivering innovative solutions for over forty years. Our automation, Ethernet and cellular M2M technology enables companies worldwide to gain real-time data visibility that drives productivity. Product brands include Red Lion, N-Tron and Sixnet. With headquarters in York, Pennsylvania, the company has offices across the Americas, Asia-Pacific and Europe. Red Lion is part of Spectris plc, the productivity-enhancing instrumentation and controls company. For more information, please visit www.redlion.net.