

# N-Tron® Series NT24k®-16M12 Industrial Ethernet Switch



## Industrial Managed Gigabit Ethernet IP67 Switch

Red Lion's N-Tron® series NT24k®-16M12 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 communication network for equipment in harsh environments.

The versatile NT24k-16M12 managed switch features 16 (sixteen) Gigabit copper ports and is housed in a dust proof and water resistant IP67-rated enclosure with redundant 10-49 VDC power inputs. Designed to handle the most demanding environments, the NT24k-16M12 offers wire-speed throughput, expanded shock and vibration ratings and a wide -40° to 85°C operating temperature rating. 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 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

- > Secure M12 Copper Ports
- > Smart Plug-and-Play Operation
- > 10 to 49 VDC Redundant Power Inputs
- > -40° to 85°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 10 to 49 VDC Power Inputs
- > 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 85°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
  - Auto sensing speed and flow control
  - Simple network ring configuration
  - Backup and restore via recovery card or XML configuration file



EtherNet/IP

# NT24k-16M12 Features & Benefits

## 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
- 802.1AB-2005 LLDP (Link Layer Discovery Protocol)

## SPECIFICATIONS

### SWITCH PROPERTIES

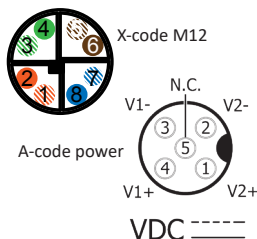
Operation: Managed  
IP67-rated hardened metal enclosure  
Dustproof  
Protection against low/high pressure water jets  
Safe for temporary immersion in water  
Number of MAC Addresses: 16,000  
IEEE Compliance: 802.3, 802.3u, 802.3ab, 802.3x,  
802.1d/D/w, 802.1p, 802.1Q, 802.1x  
IEEE 1588v2 Software-Based Option  
Latency (Typical): 1.6 μs  
Switching Method: Store-and-Forward  
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: 10-49 VDC  
Standard Model Steady Input Current: 0.70A @ 24 VDC  
Inrush: 37A/0.022 ms @ 24VDC  
BTU 58  
Bypass Relay Model Steady Input Current: 0.85A @ 24VDC  
Inrush: 37A/0.022ms @ 24VDC  
BTU 70

### 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 85°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, 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 lbs (2.27kg)  
Mount: Bulkhead

### WARRANTY

3 Years on Design and Manufacturing Defects

# NT24k-16M12 Ordering Guide

## ORDERING GUIDE

PART NUMBER	DESCRIPTION
NT24K-16M12	IP67 rated 16-Port Gigabit Managed Industrial Ethernet Switch with M12 8-pin X-coded female connectors
NT24K-16M12-PT	IP67 rated 16-Port Gigabit Managed Industrial Ethernet Switch with M12 8-pin X-coded female connectors, PTP Enabled
NT24K-16M12-R	IP67 rated 16-Port Gigabit Managed Industrial Ethernet Switch with M12 8-pin X-coded female connectors, with bypass relay
NT24K-16M12-R-PT	IP67 rated 16-Port Gigabit Managed Industrial Ethernet Switch with M12 8-pin X-coded female connectors, with bypass relay, PTP Enabled
NTCD-CFG-M12	NT24k Configuration Recovery Device, M12
NTPS-24-1.3	DIN-Rail Power Supply 1.3 Amp @ 24 VDC
NT24K-KIT-PTP	NT24k Upgrade License to Enable IEEE 1588/PTP on Non-PT NT24k switches

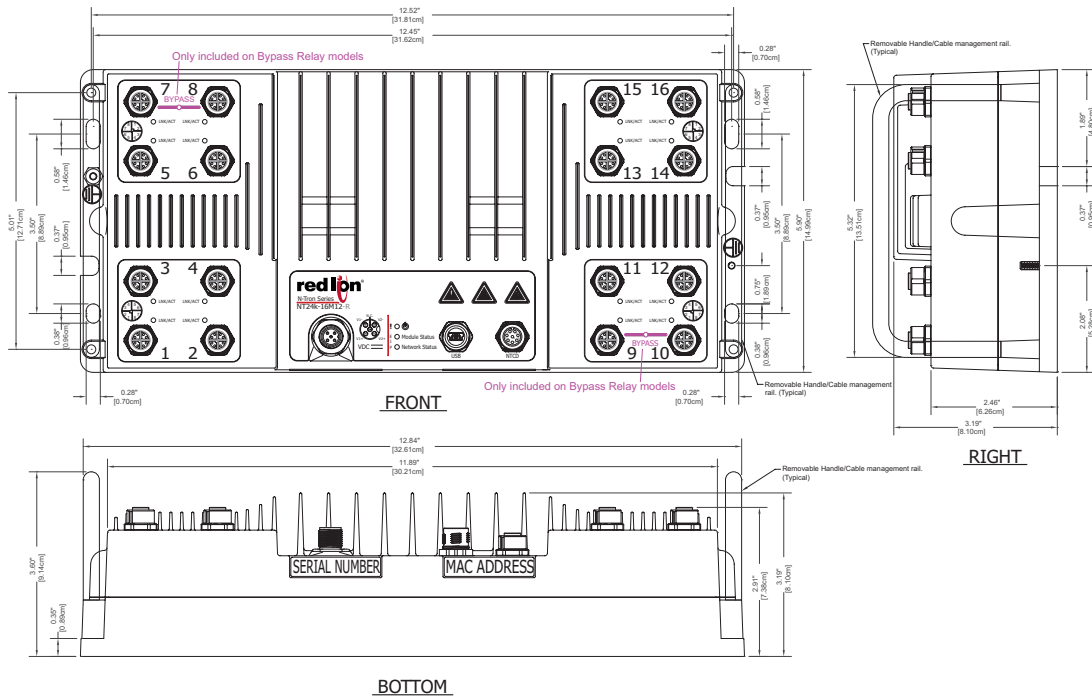
## CABLE ACCESSORIES ORDERING GUIDE

PART NUMBER	DESCRIPTION
<b>Ethernet Cables; XXX=Cable Length*</b>	
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
<b>Ethernet Connectors</b>	
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
<b>Power Cables; x= Length of cable in feet (1-100)</b>	
PWR-M12-A-X	Power Cable, M12 A-Coded Straight Female to bare end, Shielded
PWR-RM12-A-X	Power Cable, M12 A-Coded 90deg Female to bare end, Shielded
<b>USB Cables</b>	
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

# NT24k-16M12 Dimensions

## DIMENSIONS In inches [cm]



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



For over 50 years, Red Lion has strived to be THE Industrial Data Company™. The company empowers industrial organizations around the world to unlock the value of data by developing and manufacturing innovative solutions to access, connect and visualize their information. Red Lion products make it easy for companies to gain real-time data visibility that drives productivity. Red Lion is part of Spectris plc, the experts in providing insight through precision measurement. For more information, please visit [www.redlion.net](http://www.redlion.net).

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