NT24k®-DR16 Modular Industrial Switch

N-Tron® Networking Series

RED LION™
a spectris company

▶▶▶ Managed Gigabit Industrial Ethernet Switch

The N-Tron® series NT24k®-DR16 is a modular managed switch designed for factory automation, utilities, security surveillance, SCADA and other industrial applications.

The Red Lion N-Tron series NT24k-DR16 managed industrial Ethernet switch features connectivity for up to 16 Gigabit ports and offers a wide range of connectivity options—including 100Base, Gigabit, fiber optic and copper options—in a rugged DIN-rail mountable enclosure. Designed to handle the most demanding environments, the NT24k-DR16 delivers wire-speed throughput and includes expanded shock and vibration tolerances, extreme operating temperature range and two slots to accommodate mix-and-match port modules. N-Ring™ technology restores network communication within ~30ms of fault detection. Robust remote monitoring capabilities make management easy.

APPLICATIONS

- Factory Automation
- Utilities
- SCADA
- Security Surveillance
- Transportation
- Alternative Energy

PRODUCT HIGHLIGHTS

- All Gigabit Modular Design
- Up to 16 Port Connections
- High Environmental Specifications
- N-Ring™ Advanced Ring Technology
- Robust Remote Monitoring
- Smart Plug-and-Play Operation

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

- Supports up to two of the following port modules:
  - 8-port 10/100/1000BaseT(X) module
  - 8-port 100Base fiber module
  - 8-port 1000Base fiber module
  - 8-port Gigabit SFP module
  - 8-port dual mode SFP module (100Base or 1000Base SFP transceivers)
- -40° C to 75° C operating temperature
- Power input selections:
  - Low Voltage: 18-49 VDC
  - High Voltage: 90-264 VAC or 90-300 VDC
- Onboard temperature sensor
- ESD and surge protection diodes on all copper ports
- Auto-sensing 10/100/1000BaseT(X), duplex and MDIX
- USB configuration port
- Configurable alarm contact
- Optional backup/restore configuration device

- Fully managed features include:
  - SSH/SSL/HTTPS
  - 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 technology
  - EtherNet/IP™ CIP™ messaging
  - 802.1AB-2005 LLDP (Link Layer Discovery Protocol)

industrial networking

LISTED 65SN

RoHS compliant

EtherNet/IP

Managed Gigabit Industrial Ethernet Switch Specifications

SWITCH PROPERTIES

Number of MAC Addresses: 16K
IEEE 1588v2 Software-Based Option
Aging Time: Programmable
Latency (typical): 1.6 µs
Switching Method: Store & Forward
MTBF: >1 million hours
Jumbo Frame Support

POWER INPUT OPTIONS

Select one:
Low Voltage: 18-49 VDC
High Voltage: 90-264 VAC or 90-300 VDC
Input Current (max): 1.52A @ 24VDC
Input Current (max): 580mA @120 VAC/300mA @ 124VDC
BTU/hr: 125 @ 24VDC
BTU/hr: 268 @ 120VAC/127 @ 124VDC

CONNECTORS

10/100/1000BaseT(X): Up to sixteen (16) RJ45 copper ports
100BaseFX: Up to sixteen (16) SC or ST fiber ports
1000BaseGX: Up to sixteen (16) SC fiber ports
100BaseSX/LX SFP: Up to sixteen (16) LC fiber ports
1000BaseSX/LX SFP: Up to sixteen (16) LC fiber ports

RELIABILITY

MTBF: >1 million hours

NETWORK MEDIA

10BaseT: ≥Cat3 cable
100BaseTX: ≥Cat5 cable
1000BaseT: ≥Cat5 cable
100BaseFX, 1000BaseSX Multimode: 50-62.5/125µm
100BaseFX, 1000BaseLX Singlemode: 7-10/125µm

RECOMMENDED WIRING CLEARANCE

Front and Top: 4" (10.2 cm)

CERTIFICATION & COMPLIANCE

Product Safety:
ANSI/ISA 12.12.01-2013 Class I and II, Div. 2 and Class III, Div. 1 and 2, Groups A, B, C and D Hazardous Locations
UL508 Industrial Control Equipment
CAN/CSA-C22.2 No. 213-M1987 Class I Div. 2 Hazardous Locations
CAN/CSA-C22.2 No. 14-M1987 Industrial Control Equipment
Emissions:
FCC Title 47, Part 15, Radio Frequency Devices, Subpart B ANSI C63.4-2009; Industry Canada ICES-003, EN 55011; EN 61000-6-4, EN 61000-3-2, EN61000-3-3, EN 55032
Immunity:
EN 55024, EN 61000-6-2; 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 61000-4-8 (PFMF); IEC 61000-4-11 (VDI)
Other:
ABS Type Approval for Shipboard Applications; EMC Directive 2014/30/EU; LV Directive 2014/35/EU GOST-R, RoHS Compliant

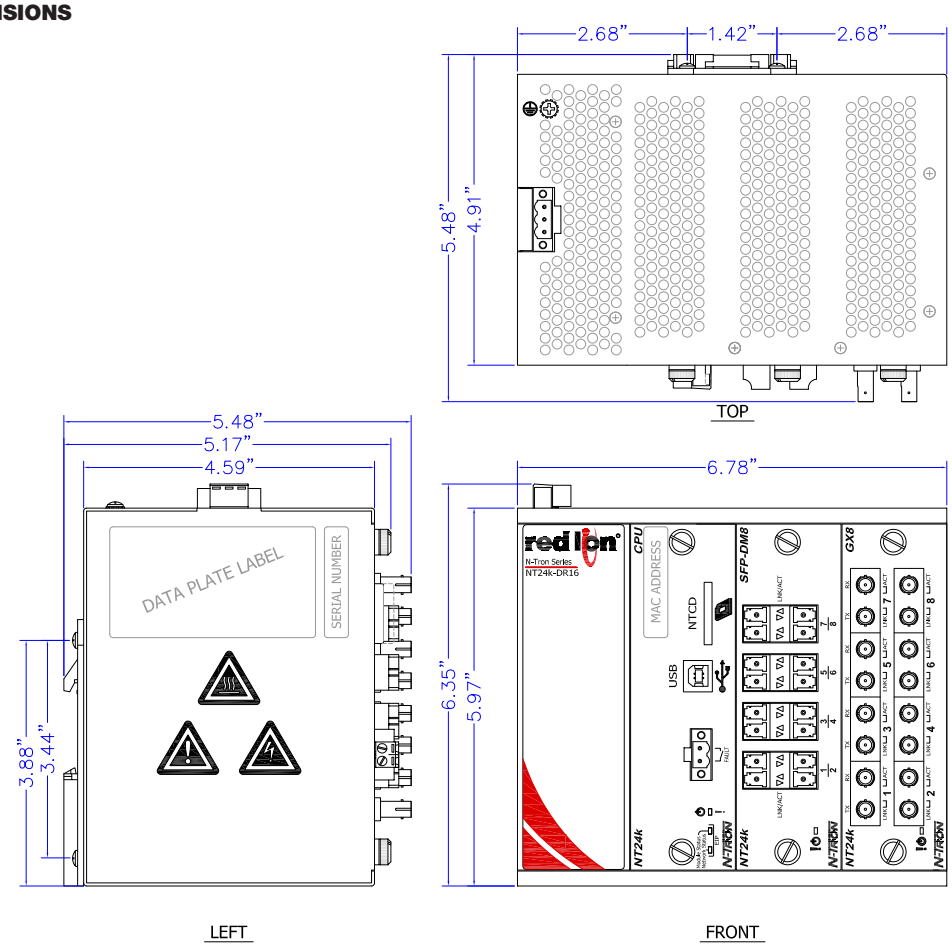
ENVIRONMENTAL

Operating Temperature: -40° C to 75° C
Operating Humidity: 5% to 95% (Non Condensing)
Operating Altitude: 0 to 10,000 ft.
Shock: 50g @ 10ms
Vibration/Seismic: 30g, 10-200 Hz, triaxial

MECHANICAL

Case Dimensions
Height: 5.97" (15.20 cm)
Width: 6.78" (17.22 cm)
Depth: 4.59" (11.65 cm)
Weight (maximum): 6.4 lbs (2.9 kg)
Mount: DIN rail

DIMENSIONS



Managed Gigabit Industrial Ethernet Switch Specifications

NT24K-FX8 MODULE - 100 MB FIBER TRANSCEIVER CHARACTERISTICS

Fiber Mode	MM	SM	SM	SM
Fiber Length*	2km	15km	40km	80km
TX Power Min	-19 dBm	-15 dBm	-5 dBm	-5 dBm
RX Sensitivity Max	-31 dBm	-31 dBm	-34 dBm	-34 dBm
Wavelength	1310 nm	1310 nm	1310 nm	1550 nm

NT24K-GX8 MODULE - GIGABIT FIBER TRANSCEIVER CHARACTERISTICS

Fiber Mode	MM	SM	SM	SM
Fiber Length*	550m @ 50/125µm 300m @ 62.5/125µm	10km	40km	80km
TX Power Min	-9.5 dBm	-9.5 dBm	-5 dBm	0 dBm
RX Sensitivity Max	-17 dBm	-20 dBm	-23 dBm	-24 dBm
Wavelength	850 nm	1310 nm	1310 nm	1550 nm
Laser Type	VCSEL	FP	DFB	DFB

NT24K-SFP-DM8 MODULE - SFP 100BASE FIBER TRANSCEIVER CHARACTERISTICS

Fiber Mode	MM	SM	SM	SM
Fiber Length*	2km	15km	40km	80km
TX Power Min	-19 dBm	-15 dBm	-5 dBm	-5 dBm
RX Sensitivity Max	-31 dBm	-34 dBm	-34 dBm	-34 dBm
Wavelength	1310 nm	1310 nm	1310 nm	1550 nm
Laser Type	FP	FP	FP	DFB

NT24K-SFP-DM8 OR NT24K-SFP8 MODULES- SFP GIGABIT FIBER TRANSCEIVER CHARACTERISTICS

Fiber Mode	MM	SM	SM	SM
Fiber Length*	550m @ 50/125µm 275m @ 62.5/125µm	10km	40km	80km
TX Power Min	-9.5 dBm	-9.5 dBm	-2 dBm	0 dBm
RX Sensitivity Max	-17 dBm	-20 dBm	-22 dBm	-24 dBm
Wavelength	850 nm	1310 nm	1310 nm	1550 nm
Laser Type	VCSEL	FP	DFB	DFB

* Fiber Length distances represent typical performance.
Link budgets should be evaluated based on specific application conditions.

ORDERING GUIDE

PART NUMBER	DESCRIPTION
NT24K-DR16-DC	Managed Industrial Ethernet Switch; modular DIN rail design with 2 expansion slots; redundant 18-49VDC power input
NT24K-DR16-DC-PT	Managed Industrial Ethernet Switch; modular DIN rail design with 2 expansion slots; redundant 18-49VDC power input PTP Enabled
NT24K-DR16-AC	Managed Industrial Ethernet Switch; modular DIN rail design with 2 expansion slots; 90-264VAC / 90-300VDC power inputs
NT24K-DR16-AC-PT	Managed Industrial Ethernet Switch; modular DIN rail design with 2 expansion slots; 90-264VAC / 90-300VDC power inputs PTP Enabled
NT24K-FP	Filler panel (required to fill vacant module slots)
NTCD-CFG	Configuration recovery device
NTPC-AC-US	AC power cord
NTPS-24-3	DIN rail power supply 3.0 Amp@24 VDC
NT24K-DR-PMK	NT24k DR panel mount kit
NT24K-KIT-PTP	NT24k Upgrade License to Enable IEEE 1588/PTP on Non-PT NT24k Switches
PORT MODULES & TRANSCEIVERS	
NT24K-TX8	8-port 10/100/1000BaseT module
NT24K-FX8-XX	Slide-in module with 8 100BaseFX multimode fiber ports, 2km (SC or ST)
NT24K-FXE8-XX-YY	Slide-in module with 8 100BaseFX singlemode fiber ports (SC or ST)
NT24K-GX8-SC	Slide-in module with 8 1000BaseFX multimode fiber ports, 550m (SC)
NT24K-GXE8-SC-ZZ	Slide-in module with 8 1000BaseFX singlemode fiber ports (SC)
NT24K-SFP8	Slide-in module with 8 SFP expansion slots; supports 1000Base SFP transceivers*
NT24K-SFP-DM8	Slide-in module with 8 dual mode SFP expansion slots; supports 100Base or 1000Base SFP transceivers*
NTSFP-FX	100BaseFX multimode fiber SFP pluggable mini-GBIC transceiver (LC style connector, 2km)**
NTSFP-FXE-YY	100BaseFX singlemode fiber SFP pluggable mini-GBIC transceiver (LC style connector)**
NTSFP-TX	1000BaseT copper SFP pluggable mini-GBIC transceiver
NTSFP-SX	1000BaseSX multimode fiber SFP pluggable mini-GBIC transceiver
NTSFP-LX-ZZ	1000BaseLX singlemode fiber SFP pluggable mini-GBIC transceiver

Where: XX = ST or SC connector (ST not available on some GX modules); YY = 15, 40, or 80 for FX singlemode, blank for multimode; ZZ = 10, 40, or 80 for GX singlemode; *SFP transceivers sold separately; **For use with SFP DM8 module only

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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 award-winning 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. For more information, please visit www.redlion.net. Red Lion is a Spectris company.