

NT24k™-DR16 Modular Industrial Switch

N-Tron Ethernet Series



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

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:
 - 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
 - 802.1p QoS, port QoS and DSCP
 - DHCP client
 - SNTP (Simple Network Time Protocol)
 - Multi-Member N-Ring™ technology with ~30ms healing
 - N-Link™ redundant ring technology
 - N-View™ monitoring technology
 - EtherNet/IP™ CIP™ messaging

industrial
networking



Managed Gigabit Industrial Ethernet Switch Specifications

SWITCH PROPERTIES

Number of MAC Addresses: 16K
 Aging Time: Programmable
 Latency (typical): 1.6 μ s
 Switching Method: Store & Forward
 MTBF: >1 million hours

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 16 RJ45 copper ports
 100BaseFX: Up to 16 SC or ST fiber ports
 1000BaseGX: Up to 16 SC fiber ports
 100BaseSX/LX SFP: Up to 16 LC fiber ports
 1000BaseGX SFP: Up to 16 LC fiber ports

RELIABILITY

MTBF: >1 million hours

NETWORK MEDIA

10BaseT: \geq Cat3 cable
 100BaseTX: \geq Cat5 cable
 1000BaseT: \geq Cat5 cable
 100BaseFX, 1000BaseSX Multimode: 50-62.5/125 μ m
 100BaseFXE, 1000BaseLX Singlemode: 7-10/125 μ m

RECOMMENDED WIRING CLEARANCE

Front and Top: 4" (10.2 cm)

CERTIFICATION & COMPLIANCE

Product Safety:
 Class I, Division 2, Groups A, B, C and D hazardous locations UL508
 ANSI/ISA 12.12.01-2012
 CAN/CSA-C22.2 No. 14
 CAN/CSA-C22.2 No. 213-M1987
 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 (radiated and conducted)
 Immunity: EN 61000-3-2; EN61000-3-3; 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 2004/108/EC; GOST-R

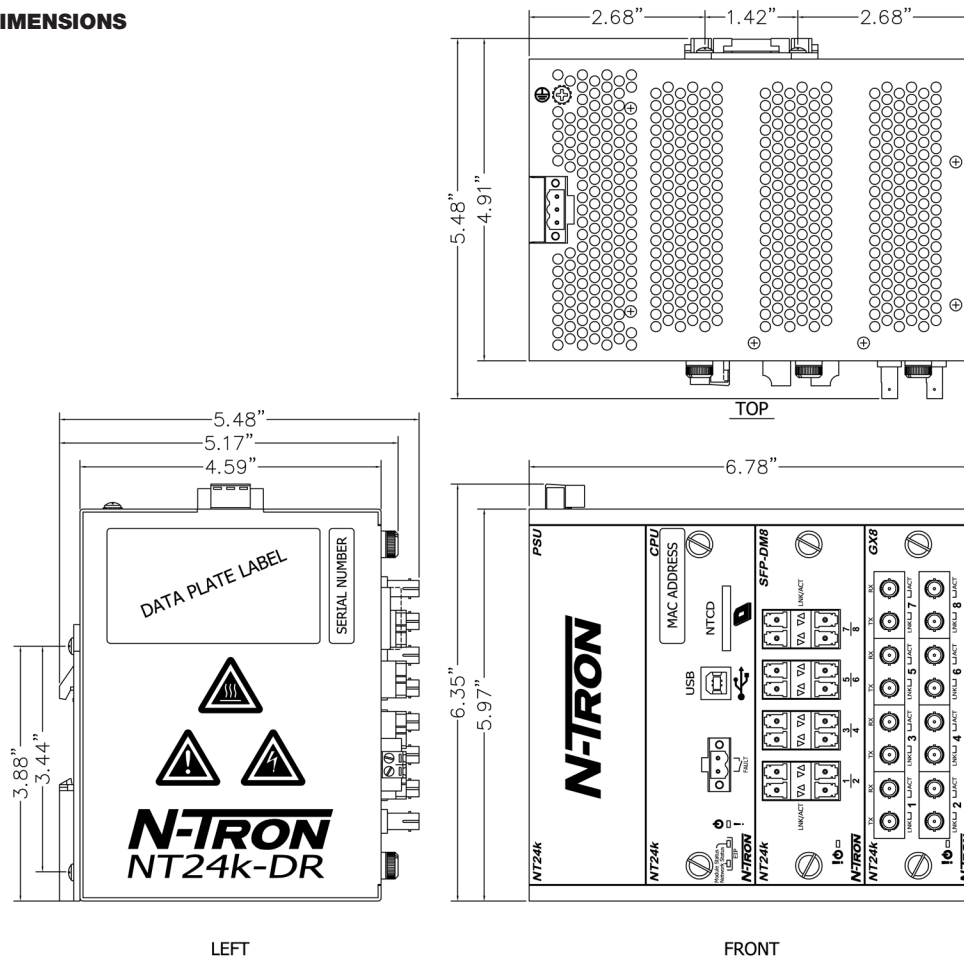
ENVIRONMENTAL

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 |
| Assumed Fiber Loss | 3.5 to 3.75 dB/km | 0.40 dB/km | 0.40 dB/km | 0.25 dB/km |
| 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 |
| Assumed Fiber Loss | 3.5 to 3.75 dB/km | 0.40 dB/km | 0.40 dB/km | 0.25 dB/km |
| 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 |
| Assumed Fiber Loss | 3.5 to 3.75 dB/km | 0.45 dB/km | 0.35 dB/km | 0.25 dB/km |
| Laser Type | VCSEL | FP | DFB | DFB |

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-AC | Managed Industrial Ethernet Switch; modular DIN rail design with 2 expansion slots; 90-264VAC / 90-300VDC power inputs |
| 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 |

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



www.redlion.net

Connect. Monitor. Control.

Americas
sales@redlion.net

Asia-Pacific
asia@redlion.net

**Europe
Middle East
Africa**
europe@redlion.net

+1 (717) 767-6511

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.

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