

NT24k[®]-DR24 Modular Industrial Switch

N-Tron[®] Networking Series



Managed Gigabit Industrial Ethernet Switch

The N-Tron[®] series NT24k[®]-DR24 is a modular managed switch designed for factory automation, utilities, security surveillance, SCADA and other industrial applications.

The Red Lion N-Tron series NT24k-DR24 managed industrial Ethernet switch features connectivity for up to 24 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-DR24 delivers wire-speed throughput and includes expanded shock and vibration tolerances, extreme operating temperature range and three 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 24 Port Connections
- > High Environmental Specifications
- > N-Ring Advanced Ring Technology
- > Robust Remote Monitoring
- > Smart Plug-and-Play Operation

FEATURES & BENEFITS

- > Supports up to three 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
 - Event Log
 - 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



EtherNet/IP™

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): 2.14A @ 24VDC
 Input Current (max): 780mA @120 VAC/430mA @ 124VDC
 BTU/hr: 175 @ 24VDC
 BTU/hr: 360 @ 120VAC/182 @ 124VDC

CONNECTORS

10/100/1000BaseT(X): Up to 24 RJ45 copper ports
 100BaseFX: Up to 24 SC or ST fiber ports
 1000BaseFX: Up to 24 SC fiber ports
 100BaseSX/LX SFP: Up to 24 LC fiber ports
 1000BaseGX SFP: Up to 24 LC fiber ports

NETWORK MEDIA

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

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

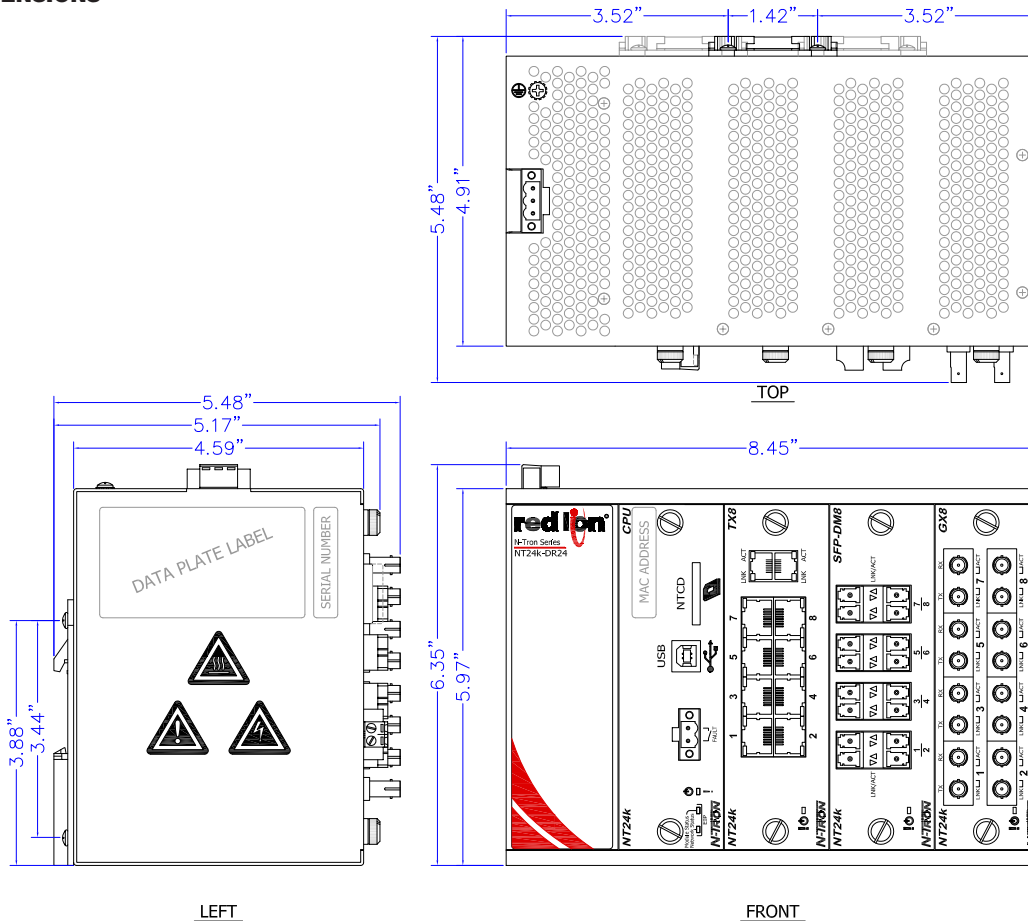
ENVIRONMENTAL

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: 8.45" (21.46 cm)
 Depth: 4.59" (11.65 cm)
 Weight (maximum): 7.8 lbs (3.54 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-DR24-DC | Managed Industrial Ethernet Switch; modular DIN rail design with 3 expansion slots; redundant 18-49VDC power input |
| NT24K-DR24-AC | Managed Industrial Ethernet Switch; modular DIN rail design with 3 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