NT24k® Modular Industrial Switch

N-Tron® Networking Series

RL RED LION™
a spectris company

▶▶▶ **Managed Gigabit Industrial Ethernet Switch**

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

The Red Lion N-Tron series NT24k 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 1U 19" rackmount enclosure. Designed to handle the most demanding environments, the NT24k delivers wire-speed throughput and includes dual power inputs, 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

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 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 85°C operating temperature
> Dual power input options:
- 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

FC c(UL)us LISTED 65SN CE ABS TYPE APPROVED PRODUCT PG RoHS Compliant EtherNet/IP™

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
Input Voltages:
Low Voltage: 18-49 VDC
High Voltage: 90-264 VAC or 90-300 VDC
Input Current (max): 2.26A @ 24VDC
Input Current (max): 790mA @120 VAC/450mA @ 124VDC
BTU/hr: 185 @ 24VDC
BTU/hr: 365 @ 120VAC/190 @ 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
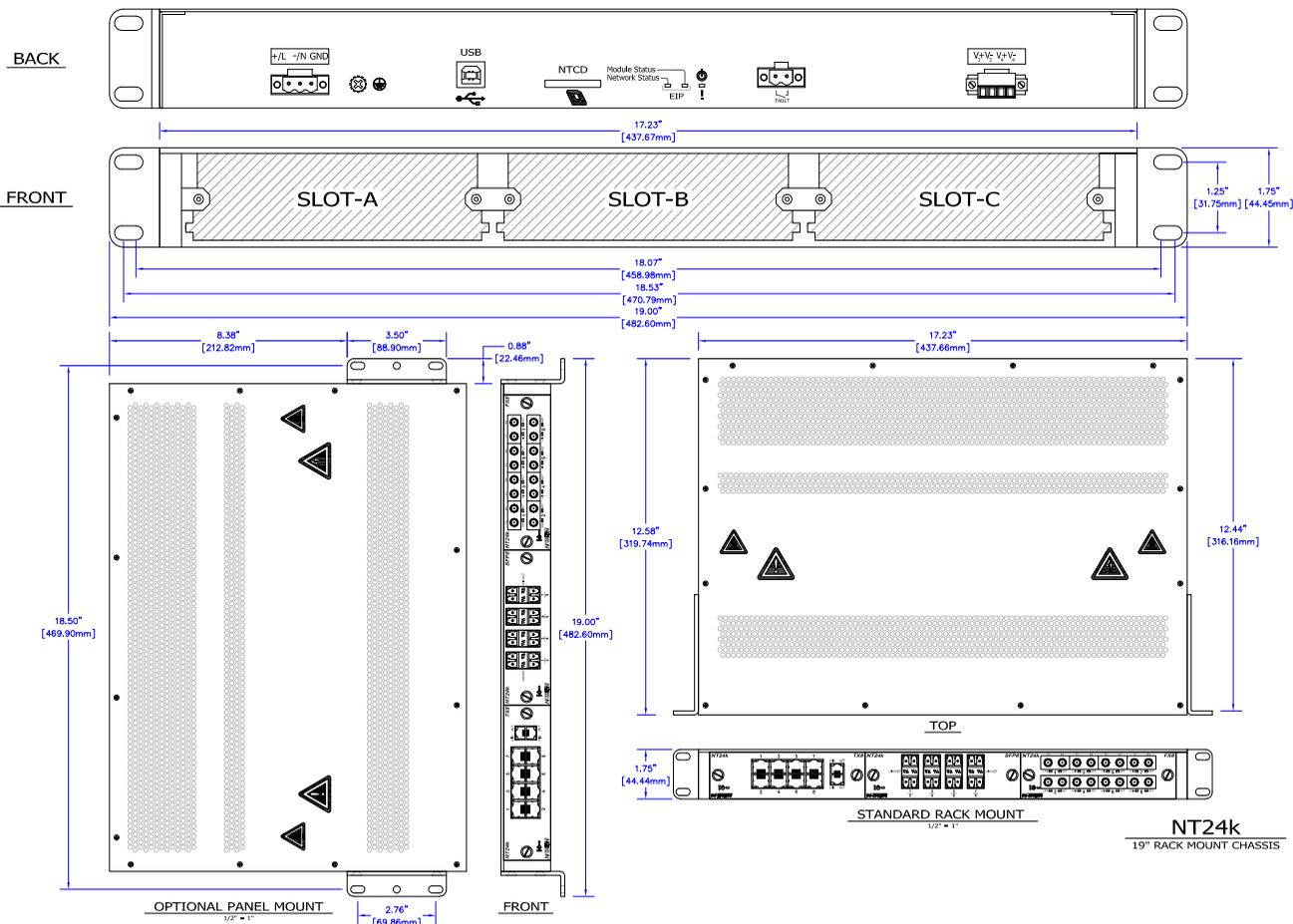
RELIABILITY
MTBF: >1 million hours

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 Back: 4" (10.2 cm)

DIMENSIONS

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 85° 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: 1.9" (4.8 cm)
Width: 17.5" (44.5 cm)
Depth: 12.7" (32.0 cm)
Weight (maximum): 12.85 lbs (5.83 kg)
Mount: Rackmount 1U

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

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-DC1	1U rackmount 3-slot modular Gigabit switch with one redundant 18-49 VDC power input
NT24K-DC1-PT	1U rackmount 3-slot modular Gigabit switch with one redundant 18-49 VDC power input PTP Enabled
NT24K-DC2	1U rackmount 3-slot modular Gigabit switch with two redundant 18-49 VDC power inputs
NT24K-DC2-PT	1U rackmount 3-slot modular Gigabit switch with two redundant 18-49 VDC power inputs PTP Enabled
NT24K-AC1	1U rackmount 3-slot modular Gigabit switch with one 90-264 VAC/90-300 VDC power input
NT24K-AC1-PT	1U rackmount 3-slot modular Gigabit switch with one 90-264 VAC/90-300 VDC power input PTP Enabled
NT24K-AC2	1U rackmount 3-slot modular Gigabit switch with two 90-264 VAC/90-300 VDC power input
NT24K-AC2-PT	1U rackmount 3-slot modular Gigabit switch with two 90-264 VAC/90-300 VDC power input PTP Enabled
NT24K-AC1-DC1	1U rackmount 3-slot modular Gigabit switch with one each 90-264 VAC/90-300 VDC and 18-49 VDC power inputs
NT24K-AC1-DC1-PT	1U rackmount 3-slot modular Gigabit switch with one each 90-264 VAC/90-300 VDC and 18-49 VDC power inputs PTP Enabled
NT24K-FP	Filler panel (required to fill vacant module slots)
NT24-PMK	Panel mount kit
NTCD-CFG	Configuration recovery device
NTPC-AC-US	AC power cord
NTPS-24-3	DIN rail power supply 3.0 Amp@24 VDC
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.

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