

# NT24k<sup>®</sup>-12SFP-DM4 Industrial Ethernet Switch

N-Tron<sup>®</sup> Networking Series



## ▶▶▶ Industrial Managed Gigabit Ethernet Switch

Red Lion's N-Tron<sup>®</sup> series NT24k<sup>®</sup>-12SFP-DM4 compact managed Gigabit Ethernet switch features eight 10/100/1000Base-T(X) ports and four dual-mode 100/1000Base SFP slots with LC fiber or copper connectors, providing a reliable and secure communication network to equipment in harsh environments.



The versatile NT24k-12SFP-DM4 managed switch features 12 ports (eight Gigabit copper ports and four dual-mode SFP expansion slots, which support 100Base or 1000Base SFP transceivers) and is housed in a compact, hardened metal DIN-rail enclosure with redundant 10-49 VDC power inputs. Designed to handle the most demanding environments, the NT24k-12SFP-DM4 offers wire-speed throughput, expanded shock and vibration ratings and wide -40° to 85°C operating temperature rating. IGMP auto-configuration, IEEE 802.1x with RADIUS remote server authentication and N-Ring<sup>™</sup> fast healing ring technology ensure quick deployment and robust secure network communications in alternative energy, factory automation applications, transportation and water/wastewater.

### APPLICATIONS

- > Alternative Energy
- > Manufacturing
- > Oil & Gas
- > Transportation
- > Water/Wastewater

### PRODUCT HIGHLIGHTS

- > Copper & Fiber Ports
- > Smart Plug-and-Play Operation
- > 10 to 49 VDC Redundant Power Inputs
- > -40° to 85°C Wide Operating Temperature
- > Robust Remote Monitoring
- > N-Ring & N-Link<sup>™</sup> 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

- > 12 Copper and Fiber Ports
  - Eight 10/100/1000Base-T(X) copper ports
  - Four dual-mode SFP expansion slots; supports 100Base or 1000Base SFP transceivers
- > Redundant 10 to 49 VDC Power Inputs
  - Keeps network running in the event of a power supply failure
- > 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
  - Simple network ring configuration
  - Backup and restore via recovery card or XML
- > 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<sup>™</sup> monitoring technology
  - EtherNet/IP<sup>™</sup> CIP<sup>™</sup> messaging
  - 802.1AB-2005 LLDP (Link Layer Discovery Protocol)

industrial  
networking



EtherNet/IP<sup>™</sup>

# ▶▶▶ NT24k-12SFP-DM4 Specifications

## SWITCH PROPERTIES

Operation: Managed  
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  $\mu$ s  
Switching Method: Store-and-Forward  
LED Status Indicators  
Configurable Alarm Contact  
Onboard Temperature Sensor  
Supports Full/Half Duplex Operation  
Maximum Throughput: Up to 24.0 Gb/s  
MDIX Auto Sensing Cable  
Auto Sensing Speed and Flow Control  
Communications: Full Wire Speed  
MTBF: >2 million hours  
Jumbo Frame Support

## POWER INPUT

Input Voltage: 10-49 VDC  
Steady Input Current: 760 mA @ 24 VDC  
Inrush: 20.4 A / .3 ms @ 24 VDC  
BTU/HR: 62.26

## CONNECTORS

10/100/1000BaseT: Eight (8) RJ-45 ports  
ESD and surge protection diodes on all copper ports  
1000BaseT SFP: Up to four (4) RJ-45 copper ports  
100BaseFX SFP: Up to four (4) LC fiber ports  
1000BaseSX/LX SFP: Up to four (4) LC fiber ports  
Configuration Port: One (1) USB Type B

## NETWORK MEDIA

10BaseT:  $\geq$  Cat3 cable  
100BaseTX:  $\geq$  Cat5 cable  
1000BaseT:  $\geq$  Cat5e cable  
100BaseFX, 1000BaseSX Multimode: 50-62.5/125 $\mu$ m  
100BaseFX, 1000BaseLX Singlemode: 7-10/125 $\mu$ m

## RECOMMENDED WIRING CLEARANCE

Front: 4" (10.16 cm)

Top: 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 @ 5-20 Hz, Triaxial (bulkhead mounted)

## 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)  
Rail:  
EN 50155, EN 50121 and EN 61373  
Designed to Comply with:  
IEEE 1613 (Electric Utility Substations), NEMA TS1/TS2 (Traffic Control)  
Other:  
ABS Type Approval for Shipboard Applications; EMC Directive 2014/30/EU; LV Directive 2014/35/EU GOST-R, RoHS Compliant

## MECHANICAL

Case Dimensions:  
Height: 5.88" (14.92 cm)  
Width: 3.10" (7.87 cm)  
Depth: 5.54" (14.07 cm)  
Weight: 1.91 lbs (0.87 kg)  
Mount: DIN Rail 35 mm

## WARRANTY

3 Years on Design and Manufacturing Defects

# NT24k-12SFP-DM4 Specifications

## SFP 100BASE FIBER TRANSCEIVER CHARACTERISTICS

Fiber Mode	MM	SM	SM	SM
Fiber Length*	2 km	15 km	40 km	80 km
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

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

## SFP GIGABIT FIBER TRANSCEIVER CHARACTERISTICS

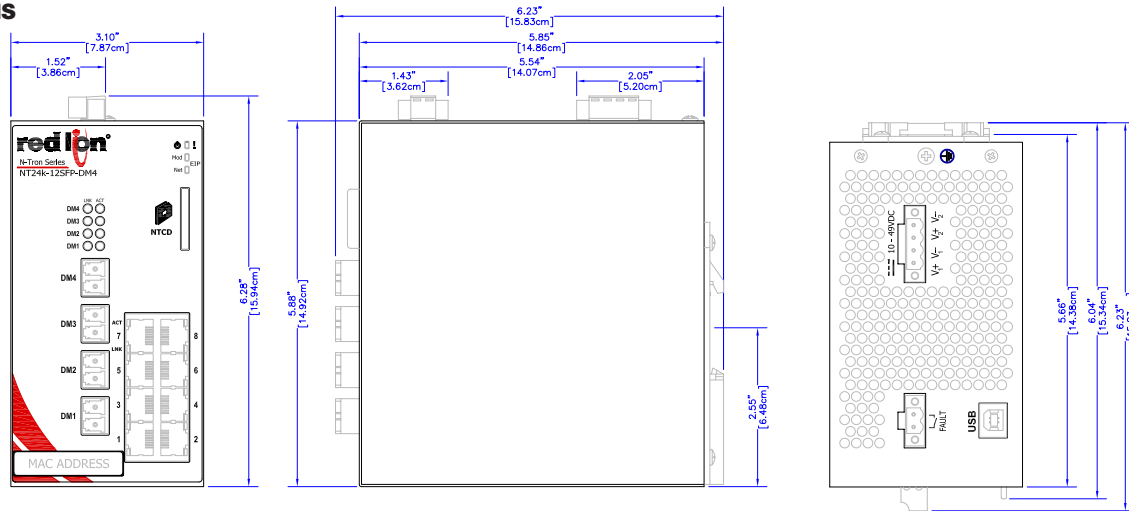
Fiber Mode	MM	SM	SM	SM
Fiber Length*	550m @ 50/125µm 275m @ 62.5/125µm	10 km	40 km	80 km
TX Power Min	-9.5 dBm	-9.5 dBm	-2 dBm	0 dBm
RX Sensitivity Max	-17 dBm	-20 dBm	-22 dBm	-24 dBm
Wavelength	850 nm	1310 nm	1310 nm	1550 nm
Laser Type	VCSEL	FP	DFB	DFB

## ORDERING GUIDE

PART NUMBER	DESCRIPTION
NT24K-12SFP-DM4	12-Port Gigabit Managed Industrial Ethernet Switch (8 10/100/1000BaseT, 4 Dual Mode (100/1000Base) SFP Expansion slots); SFP Transceivers sold separately
NT24K-12SFP-DM4-PT	12-Port Gigabit Managed Industrial Ethernet Switch (8 10/100/1000BaseT, 4 Dual Mode (100/1000Base) SFP Expansion slots); SFP Transceivers sold separately, PTP Enabled
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 (LC style connector, 550m)
NTSFP-LX-ZZ	1000BaseLX singlemode fiber SFP pluggable mini-GBIC transceiver (LC style connector)
NTCD-CFG	NT24k Configuration Recovery Device
NTPS-24-1.3	DIN-Rail Power Supply 1.3 Amp @ 24 VDC
NT24K-NM-PMK	NT24k Non-Modular Panel Mount Kit
NT24K-KIT-PTP	NT24k Upgrade License to Enable IEEE 1588/PTP on Non-PT NT24k Switches

Where YY=15, 40, or 80  
Where ZZ=10, 40, or 80

## DIMENSIONS



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



**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 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](http://www.redlion.net). Red Lion is a Spectris company.

ADLD0425 0601119 © 2019 Red Lion Controls, Inc. All rights reserved. Red Lion, the Red Lion logo, N-Tron and Sixnet are registered trademarks of Red Lion Controls, Inc. All other company and product names are trademarks of their respective owners.