508FX2 Industrial Ethernet Switch

N-Tron® Networking Series

▶▶▶ Industrial Ethernet Switch

PRODUCT FEATURES

- Full IEEE 802.3 and 1613 Compliance
- NEMA TS1/TS2 Compliance
- American Bureau of Shipping (ABS) Type Approval
- Six (6) 10/100 BaseTX RJ-45 Ports
- Two (2) 100BaseFX Ports, ST (shown) or SC
- -40ºC to 85ºC Operating Temperature
- Auto Sensing 10/100BaseTX, Duplex, and MDIX
- Store-and-Forward Technology
- Up to 1.6 Gb/s Maximum Throughput
- Rugged Industrial DIN-Rail Enclosure
- Redundant Power Inputs (10-30 VDC)
- Bi-Color LEDs For Link, Speed, Activity & Duplex Status

Advanced Management Functions (With -A option only):

- IGMP Snooping
- VLAN
- QoS
- Trunking and Mirroring
- N-View™ (Remote Monitoring Using OPC Technology)

PRODUCT OVERVIEW

The N-TRON® 508FX2 Series Industrial Ethernet Switch offers outstanding performance and ease of use. It is ideally suited for connecting Ethernet-enabled industrial and/or security equipment and can be optionally con•gured with advanced Ethernet communication management functions.

Industrial Packaging and Specications

The 508FX2, designed to operate in industrial environments, is housed in a rugged DIN-rail-mounted steel enclosure. Optional panel and rack mount kits are also available. The switch comes standard with extended temperature rating, extended shock and vibration specs, redundant power inputs, and a high MTBF (greater than 2M hours).

Ease of Use

The 508FX2 requires no setup unless the advanced port functions are utilized. The six 10/100BaseTX ports are auto sensing and auto con•guring. Each copper port automatically negotiates maximum speed and performance by default. The two •ber optic ports support full 200Mb/s communications via 100BaseFX. Bi-color LEDs are provided to display the link status, link speed and activity of each port as well as power on/off status.

Performance

The 508FX2 supports up to 4,000 MAC addresses and uses advanced IEEE 802.3 Fast Ethernet 10/100BaseTX switching technology to eliminate network collisions and increase network determinism. A high-speed processor and backplane allow full-wire speed capability on all ports simultaneously.

ADVANCED MANAGEMENT FEATURES

The 508FX2-A offers several management functions that can be easily con•gured using the COM Port (DB 9 connector located on the right side of the switch).

IGMP Snooping: Internet Group Management Protocol allows the N-Tron switch to intelligently forward and •lter multicast traf•c.

VLAN: Virtual Local Area Network allows switch segmentation in order to create two or more separate local area network domains.

QoS: Quality of Service streamlines network operation by managing packet priority. The primary goal of QoS is to improve the latency of prioritized Ethernet packets required for ring management, real-time and other interactive applications.

Trunking: Trunking (aggregation) enables multiple physical ports to be linked together and function as one uplink to another identically con•gured trunking-capable switch. This feature increases the bandwidth between switches and creates redundancy for applications requiring high levels of fault tolerant operation.

Port Mirroring: Port mirroring allows traf•c on one port to be duplicated and sent to a designated mirror port. This function can be used to monitor Ethernet traf•c on the designated source port using the assigned mirror port.

N-View™ OPC Switch Monitoring: (With -A or -N Option Only) N-View OPC server software can be used with popular HMI software packages to transmit operational information from N-View-capable switches. This technology enables network traf•c monitoring, as well as alarm and trending details. In all, the N-View OPC Server collects 41 different traf•c variables per port and •ve system level variables per switch, providing a complete overview of network load, service quality, and packet traf•c. Empowered with N-View OPC Server data, users can resolve network problems faster and make more informed decisions about overall system performance.

industrial networking

▶▶▶ 508FX2 Industrial Ethernet Switch Specifications

Switch Properties

Number of MAC Addresses:	4,000
Aging Time:	20s, Programmable (-A option)
Latency Typical:	2.1 µs
Switching Method:	Store & Forward

Case Dimensions

Height:	2.3" (5.8 cm)
Width:	5.9" (15.0 cm)
Depth:	3.8" (9.7 cm)
Weight:	1.6 lbs (0.8 kg)
Din-Rail:	35 mm

Electrical

Redundant Input Voltage:	10-30 VDC
Input Current:	380 mA @ 24VDC
BTU/hr:	31.1 @ 24VDC
Inrush:	8.5 amp/0.2ms @ 24VDC

Environmental

Operating Temperature:	-40°C to 85°C
Operating Humidity:	10% to 95% (Non Condensing)
Operating Altitude:	0 to 10,000 ft.

Shock and Vibration (bulkhead mounted)

Shock:	200 g @ 10 ms
Vibration/Seismic:	50 g, 5-200 Hz, Triaxial

Reliability

MTBF:	>2 Million Hours

Serial Conguration Port

Com Parameters:	9600,n,8,1

Network Media

10BaseT:	≥Cat3 Cable
100BaseTX:	≥Cat5 Cable
100BaseFX:	
Multimode:	50-62.5/125µm
Singlemode:	7-10/125µm

Connectors

10/100BaseTX:	Six (6) RJ-45 Copper Ports
100BaseFX:	Two (2) SC or ST Duplex Ports

Recommended Wiring Clearance

Front:	4" (10.2 cm)
Side:	1" (2.6 cm)

Fiber Transceiver Characteristics

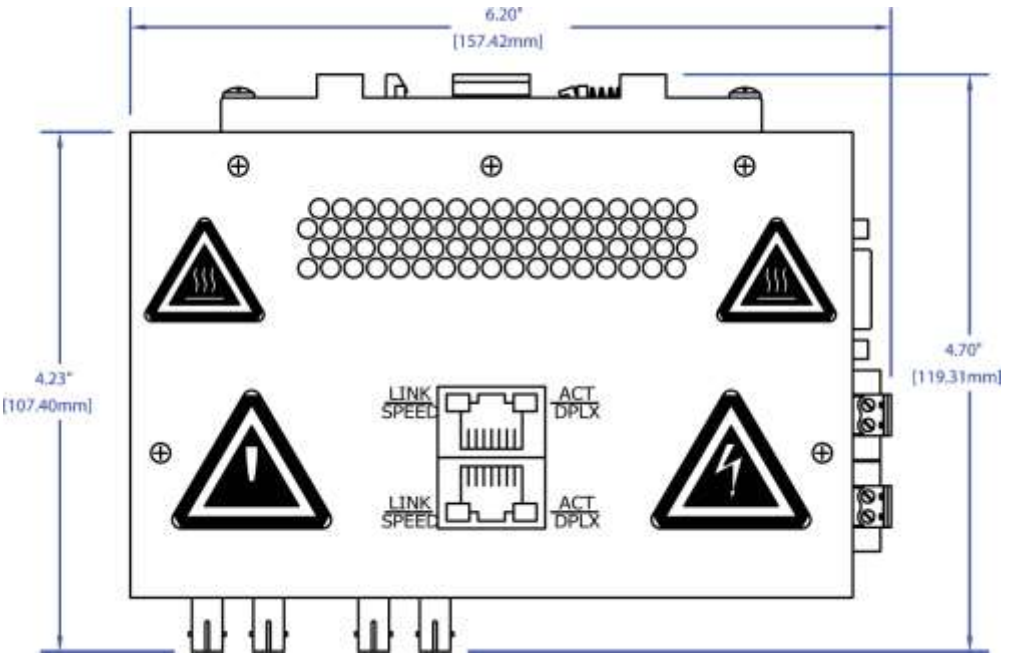
Fiber Length	*2km**	*15km***	*40km***	*80km***
TX Power Min	*-19dBm*	*-15dBm*	*-5dBm*	*-5dBm*
RX Sensitivity Max	*-31dBm*	*-31dBm*	*-34dBm*	*-34dBm*
Wavelength	*1310nm*	*1310nm*	*1310nm*	*1550nm*

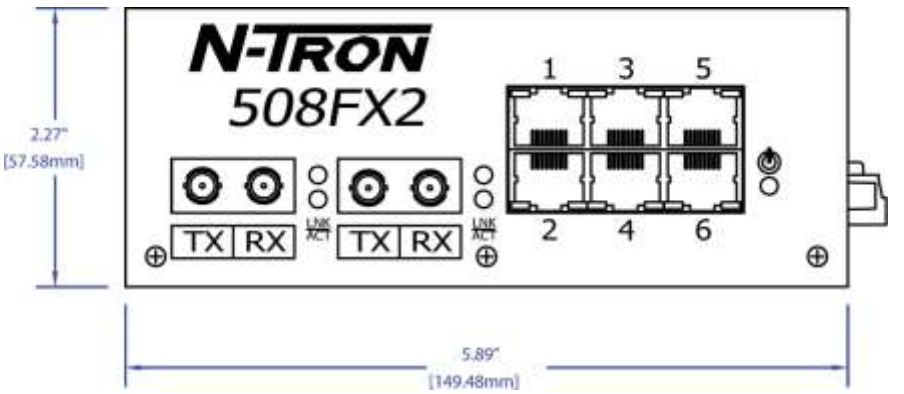
* Multimode Fiber Optic Cable
** Singlemode Fiber Optic Cable

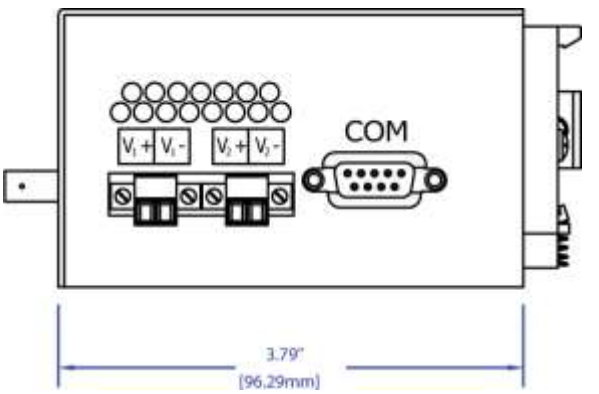
Regulatory Approvals

FCC/CE (CFR 47, Part 15, Subpart B, Class A); ICES-003
EMC Dir 89/336/EEC, EN 50204, EN 55011
EN61000-4-2, 3, 4, 5, 6, 8,11, EN61000-6-2, 4
ANSI C63.4
UL /cUL: Class I, Div 2, Groups A, B, C, D and T4
UL 508 and UL 1604
CAN/CSA-C22.2 No.213, ATEX II 3 G Ex nA
IEEE 1613 for Electric Utility Substations
ABS Type Approval for Shipboard Applications
GOST-R Certied, RoHS Compliant

Designed to comply with:
NEMA TS1/TS2 for Trafc Control


6.20"
[157.42mm]
4.23"
[107.40mm]
4.70"
[119.31mm]
LINK
SPEED
ACT
DPLX
LINK
SPEED
ACT
DPLX


N-TRON
508FX2
1 3 5
2 4 6
TX RX
TX RX
2.27"
[57.58mm]
5.89"
[149.48mm]


COM
3.79"
[96.29mm]

NT24k®-8TX-POE Industrial PoE+ Switch

N-Tron® Networking Series

RED LION™
a spectris company

▶▶▶ Industrial Managed Gigabit PoE+ Ethernet Switch

Red Lion's N-Tron® series NT24k®-8TX-POE compact managed Gigabit Ethernet switch features eight 10/100/1000Base-T(X) ports with PoE+ providing a robust solution for transmitting power and data to equipment in harsh environments.

The NT24k-8TX-POE managed switch features 8 ports (eight Gigabit IEEE 802.3af/at Power over Ethernet Plus (PoE+) ports) and is housed in a compact, hardened metal DIN-rail enclosure with redundant 22-49 VDC power inputs. Designed to handle the most demanding environments, the NT24k-8TX-POE provides up to 30 Watts of power per port, high shock and vibration ratings and a wide -40° to 80°C operating temperature range.

APPLICATIONS

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

PRODUCT HIGHLIGHTS

> IEEE 802.3af/at PoE+ Output
> Smart Plug-and-Play Operation
> 22 to 49 VDC Redundant Power Inputs
> -40° to 80°C Wide Operating Temperature
> Robust Remote Monitoring
> N-Ring™ & N-Link 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

> 8 Copper Ports
  - Eight 10/100/1000Base-T(X) copper ports, supporting PoE+ on each port
> Redundant 22 to 49 VDC Power Inputs
  - Boosts power to meet PoE+ output requirements
> IEEE 802.3af/at PoE Output
  - Supports PoE+ output on all copper ports simultaneously
> Extended Environmental Specifications
  - -40° to 80°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™ monitoring technology
  - EtherNet/IP™ CIP™ messaging
  - 802.1AB-2005 LLDP (Link Layer Discovery Protocol)

industrial networking

FC c UL us LISTED 655N CE RoHS compliant EtherNet/IP

▶▶▶ NT24k-8TX-POE Specifications

SWITCH PROPERTIES
Operation: Managed
Number of MAC Addresses: 16,000
IEEE Compliant: 802.3, 802.3u, 802.3ab, 802.3x, 802.3af/at, 802.1d/D/w, 802.1p, 802.1Q, 802.1x
IEEE 1588v2 Software-Based Option
Latency (Typical):1.6 µs
Switching Method: Store-and-Forward
Supports 30 Watts per Port (25.5 Watts at the PD)
LED Status Indicators
Configurable Alarm Contact
Onboard Temperature Sensor
Supports Full/Half Duplex Operation
Maximum Throughput: Up to 16 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: 22-49 VDC
Steady Input Current: 10.94 A @ 24 VDC
Inrush: 68.0 A / .09 ms @ 24 VDC
BTU/HR: 122

POWER OVER ETHERNET
PoE Standard: IEEE 802.3af/at Gigabit PSE
PoE Output Power: 57 VDC / 30 Watts Output (25.5 W at PD)
Power Pin Assignment: Pins 1/2 (-), Pins 3/6 (+)
PSE Type: Type 2

CONNECTORS
10/100/1000BaseT: Eight (8) RJ-45 ports
ESD and surge protection diodes on all copper ports
Configuration Port: One (1) USB Type B

NETWORK MEDIA
10BaseT: ≥ Cat3 cable
100BaseTX: ≥ Cat5 cable
1000BaseT: ≥ Cat5e cable

RECOMMENDED WIRING CLEARANCE
Front: 2" (5.08 cm)
Top: 4" (10.16 cm)

ENVIRONMENTAL
Operating Temperature: -40°C to 80°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 @ 5-200 Hz, Triaxial (bulkhead mounted)

CERTIFICATION & COMPLIANCE
Product Safety:
ANSI/ISA 12.12.01-2013 Class Iand 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 IDiv. 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

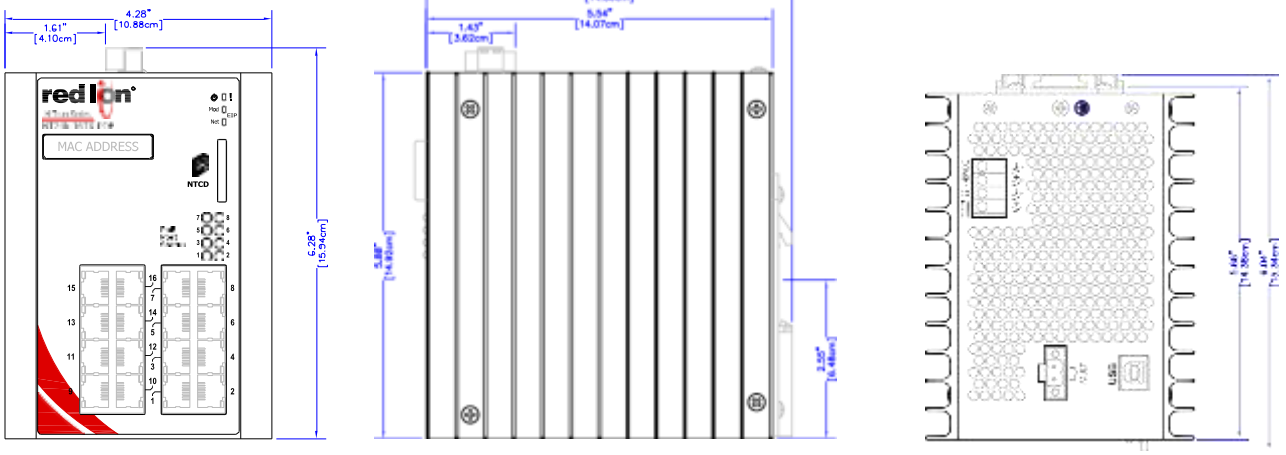
MECHANICAL
Case Dimensions:
Height: 5.88" (14.92 cm)
Width: 4.28" (10.88 cm)
Depth: 5.54" (14.07 cm)
Weight: 3.13 lbs (1.42 kg)
Mount: DIN Rail 35 mm

WARRANTY
3 Years on Design and Manufacturing Defects

ORDERING GUIDE

PART NUMBER	DESCRIPTION
NT24K-8TX-POE	Eight Port 10/100/1000BaseT Managed PoE+ Industrial Ethernet Switch
NT24K-8TX-POE-PT	Eight Port 10/100/1000BaseT Managed PoE+ Industrial Ethernet Switch, PTP Enabled
NTCD-CFG	NT24k Configuration Recovery Device
NTPS-24-20	DIN-Rail Power Supply 20 Amp @ 24 VDC
NTPS-48-10	DIN-Rail Power Supply 10 Amp @ 48 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

DIMENSIONS



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

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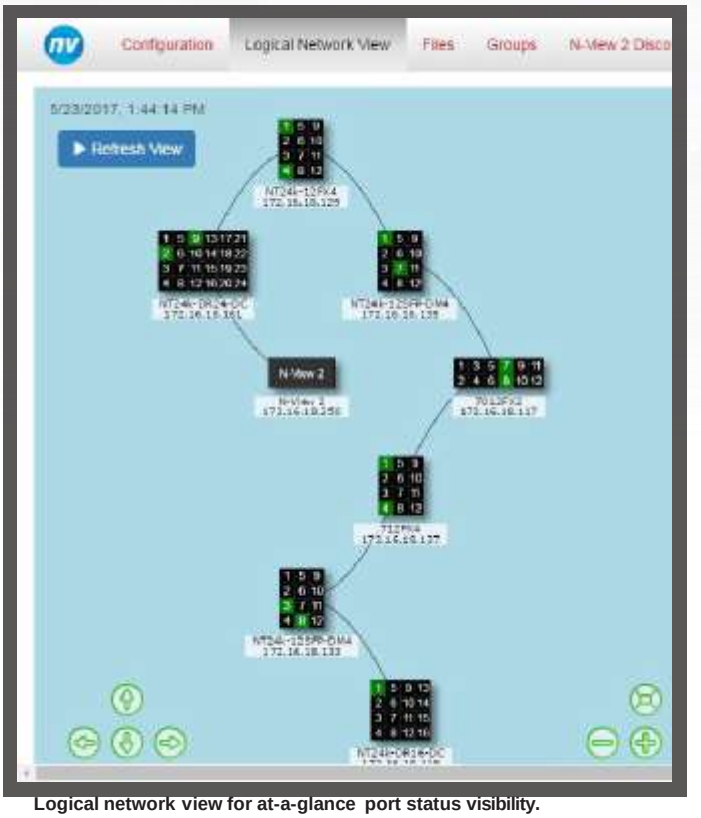
As the global experts in communication, monitoring and control for industrial automation and networking, Red Lion has been delivering innovative solutions for over forty years. Our award-winning technology enables companies worldwide to gain real-time data visibility that drives productivity. Product 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.

N-Tron® Series N-View™ 2

Remote Monitoring Software

N-View™ 2 quickly identifies N-View enabled devices and provides centralized firmware management for supported N-Tron® managed switches. Easy-to-read monitoring pages display switch status and port traffic information for troubleshooting cabling and configuration issues.

Advanced management functionality includes a visual map of discovered SNMP-enabled N-Tron series managed switches, duplicate IP address identification, and centralized firmware management. Scheduling capabilities allow firmware and bootloader upgrades to be set for immediate or future action. This enables users to maximize uptime by planning updates for user-defined groups or individual devices based on operational requirements.



Logical network view for at-a-glance port status visibility.

PRODUCT HIGHLIGHTS

> Simplified identification and monitoring of N-View™ enabled devices
> Schedule future or immediate switch firmware or bootloader updates by group, model or device
> Clearly identify discovered devices with user-defined names
> View status of each switch's ports concurrently
> Perform a soft reset of port statistics within the application without re-booting the switch
> View N-Tron series managed switches (SNMP (V1/V2) enabled) in a logical map
> Automatic detection of duplicate IP addresses allows IP address change from the discovery window
> Hyperlink from discovered IP address to the Web GUI for advanced configuration options
> Export discovered devices, groups or port statistics to .csv file

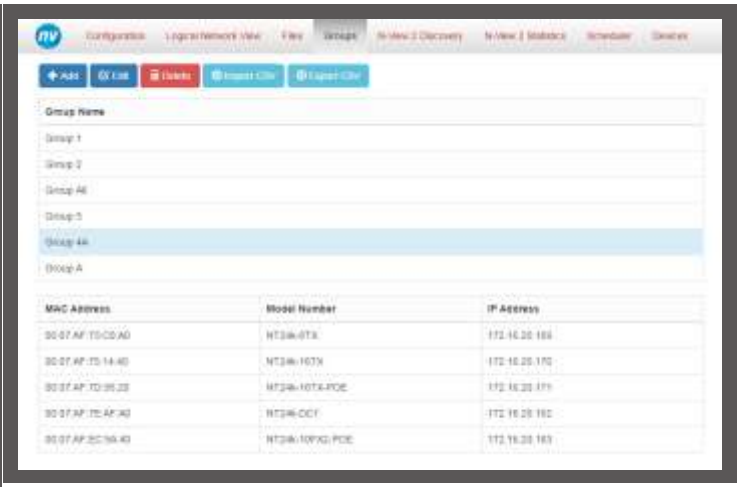
FEATURES & BENEFITS

> Maximize efficiency
- Access to switch and port level status indicators for all N-View enabled devices from one interface

> Maximize productivity and minimize maintenance time
- Single step device discovery and visualization of SNMP enabled devices
- View switch model name, IP and MAC addresses as well as the MAC address of connected devices directly from the map
- Create meaningful device names for easy identification
- Logically group SNMP enabled devices to suit operational requirements for updates (by model, location, function, etc.)
- Firmware updates can be deployed immediately for individual or defined groups or scheduled to update at future date and time
- Quickly identify and reassign duplicate IP addresses from the discovered device screen
- Easily hyperlink from discovered device tab to individual web browsers for advanced device configuration

N-View™ 2 Specifications

Easily monitor the progress of updates on screen.



Define switch groups based upon user and application parameters.

N-VIEW™ 2 SWITCH INFORMATION

- MAC Address
- Model
- Alias Name
- IP Address
- N-Ring™ State
- Reset Counters

N-VIEW™ 2 PORT STATISTICS

- Port Number
- Speed Duplex
- Usage %
- Tx Octets
- Rx Octets
- Rx SA Changes
- Tx Dropped Packets
- Tx Collisions
- Tx Single Collision
- Tx Multiple Collision
- Tx Deferred transmit
- Tx Late Collision
- Tx Excessive Collision
- Tx Frame In Disc
- Tx Pause Pkts
- Rx Dropped Packets
- Rx Jabbers
- Rx Alignment Errors
- Rx FCS Errors
- Rx Pause Pkts
- Rx Fragments
- Rx Excessive Disc Size
- Rx Symb Errors
- Rx Undersize Packets
- Rx Oversize Packets
- Tx Broadcast Packets
- Tx Multicast Packets
- Tx Unicast Packets
- Rx Good Octets
- Rx Broadcast Packets
- Rx Multicast Packets
- Rx Unicast Packets
- 64 Octets Packets
- 65 127 Octets Packets
- 128 255 Octets Packets
- 256 511 Octets Packets
- 512 1023 Octets Packets
- 1024 1522 Octets Packets
- N-Ring Version
- N-Ring Enabled/Disabled
- Port Link Status

SWITCH-SPECIFIC CAPABILITIES

Switch Models	Discovery	Remote Monitoring	Firmware Management	Logical View
Current Devices				
NT5000	X	X	X	X
NT24k	X	X	X	X
N-Tron 700	X	X	X	X
N-Tron 7000*	X	X	X	X
N-Tron 500-A	X	X		
N-Tron 500-N	X	X		
N-Tron 300-N	X	X		
Legacy Devices				
N-Tron 9000	X	X		
N-Tron 7014	X	X		
N-Tron 900-N	X	X		
N-Tron 400-N	X	X		
N-Tron 200-N	X	X		

*Does not include N-Tron 7014

MINIMUM SYSTEM REQUIREMENTS

1. Operating System:
2. Windows 7 (64 bit only)
3. Windows 8 (64 bit only)
4. Windows 8.1 (64 bit only)
5. Windows 10 (64 bit only)
6. RAM: 8GB
7. Processor: Core i5, or equivalent 2GHz or faster
8. HDD: 350MB free

N-View 2 is included with all N-View capable N-Tron switches or the latest version can be download at:
www.redlion.net/DownloadN-View2

Specifications are subject to change. Visit www.redlion.net for more information.

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For over 50 years, Red Lion has strived to be THE Industrial Data Company™. The company empowers industrial organizations around the world to unlock the value of data by developing and manufacturing innovative solutions to access, connect and visualize their information. Red Lion products make it easy for companies to gain real-time data visibility that drives productivity. Red Lion is part of Spectris plc, the experts in providing insight through precision measurement. For more information, please visit www.redlion.net.

ADLD0471 01 2023

104TX Industrial Ethernet Switch

N-Tron Networking Series

Unmanaged Industrial Ethernet Switch

The N-TRON® 104TX is a low cost unmanaged four port Industrial Ethernet Switch. It is housed in a hardened, metal, DIN-Rail enclosure, and is designed for use in mission critical data acquisition, control, and Ethernet I/O applications.

PRODUCT FEATURES

- Compact, Space Saving Package
- Full IEEE 802.3 Compliance
- American Bureau of Shipping (ABS) Type Approval
- EN50155 for Railway applications
- Four 10/100BaseTX RJ-45 Ports
- Unmanaged Operation
- Extended Environmental Specifications
  - -40ºC to 80º Operating Temperature
  - >2M Hours MTBF
- Supports Full/Half Duplex Operation
- Up to 800 Mb/s Maximum Throughput
- MDIX Auto Sensing Cable
- Auto Sensing Speed and Flow Control
- Full Wire Speed Communications
- Store-and-forward Technology
- Redundant Power Inputs (10-30 VDC)
- LED Link/Activity Status Indication
- Hardened Metal DIN-Rail Enclosure

PRODUCT OVERVIEW

The 104TX Industrial Network Switch is designed to solve the most demanding industrial communication requirements while providing high throughput and minimum downtime.

The 104 TX provides four RJ-45 auto sensing 10/100BaseTX ports. All ports are full/half duplex capable, using "state of the art" Ethernet switching technology. The 104TX auto-negotiates the speed and flow control capabilities of the four TX port connections, and configures itself automatically.

Since the 104TX is auto sensing, there will be no need to make extensive wiring changes if upgrades are made to the host computers, plant systems, or Ethernet I/O modules. The switching fabric simply scales up or down automatically to match specific network environments.

The 104TX supports up to 2,000 MAC addresses, enabling these products to support extremely sophisticated and complex network architectures.

The 104TX is an ideal candidate for upgrading existing hubs and repeaters to increase bandwidth and determinism by virtually eliminating network collisions. The N-TRON 104TX combines affordability and the plug & play simplicity of the unmanaged hub.

The 104TX can simplify plant wiring by eliminating the need to bring data acquisition and control network connections back to a climate controlled environment. The 104TX has extended operating environmental specifications to meet the harsh needs of the industrial environment. For cost savings and convenience the network switch can be DIN-Rail mounted alongside Ethernet I/O or other Industrial Equipment.

To increase reliability the 104TX provides dual redundant power inputs. LED's are provided to display the link status and activity of each port.

104TX SPECIFICATIONS

Case Dimensions

Height:	2.9"	(7.3cm)
Width:	1.5"	(3.8 cm)
Depth:	3.6"	(9 cm)
Weight:	0.6 lbs.	(0.28 kg)
DIN-Rail:	35mm	

Electrical

Input Voltage:	10-30 VDC
Steady Input Current:	215mA@24V
Inrush:	7.8Amp/0.7ms@24V

Environmental

Operating Temperature:	-40°C to 80°C
Storage Temperature:	-40°C to 85°C
Operating Humidity:	10% to 95% (Non Condensing)
Operating Altitude:	0 to 10,000 ft.

Reliablity

MTBF:	>2 Million Hours

Network Media

10BaseT:	>Cat3 Cable
100BaseTX:	>Cat5 Cable

Connectors

10/100BaseTX:	Four (4) RJ-45 TX Copper Ports

Recommended Wiring Clearance

Front:	2" (5.08 cm)
Top:	1" (2.54 cm)

Ordering Information

104TX	Four 10/100BaseTX Ports
NTPS-24-1.3	DIN-Rail Power Supply 24V@1.3 Amp
100-MDR-1	Metal Din Rail Option*

* MDR option must be specified with switch order - not field upgradable

BENEFITS

Industrial Network Switch

- Compact Size / Small Footprint
- Extended Environmental Specifications
- Hardened Metal DIN-Rail Enclosure
- High Performance
- High MTBF >2M Hours
- ESD Protection Diodes on RJ-45 Ports
- Surge Protection Diodes on Power Inputs

Ease of Use

- Plug & Play Operation
- Auto Sensing 10/100BaseTX
- Auto Negotiation Full/Half Duplex
- MDIX Auto Cable Sensing
- Unmanaged Operation

Increased Performance

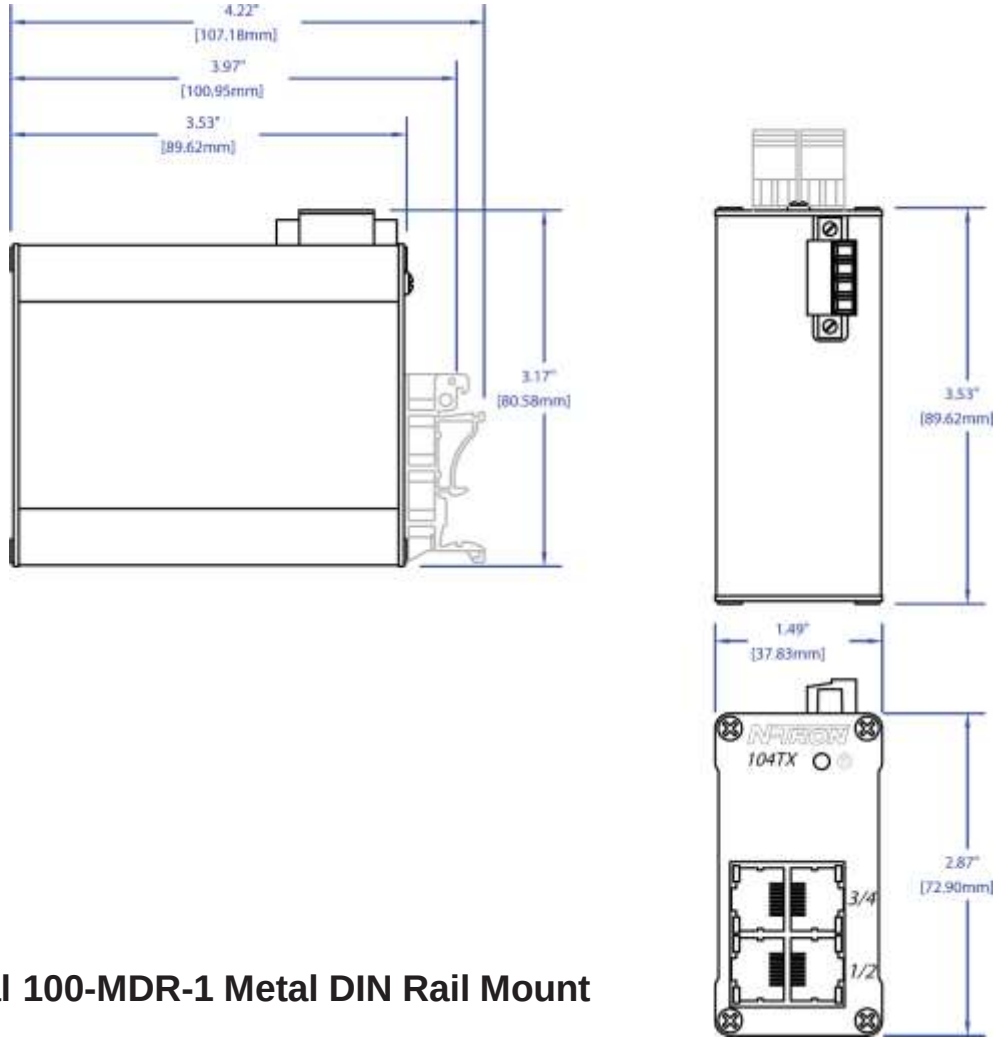
- Full Wire Speed Capable
- Full Duplex Capable
- Eliminates Network Collisions
- Increases Network Determinism

Regulatory Approvals

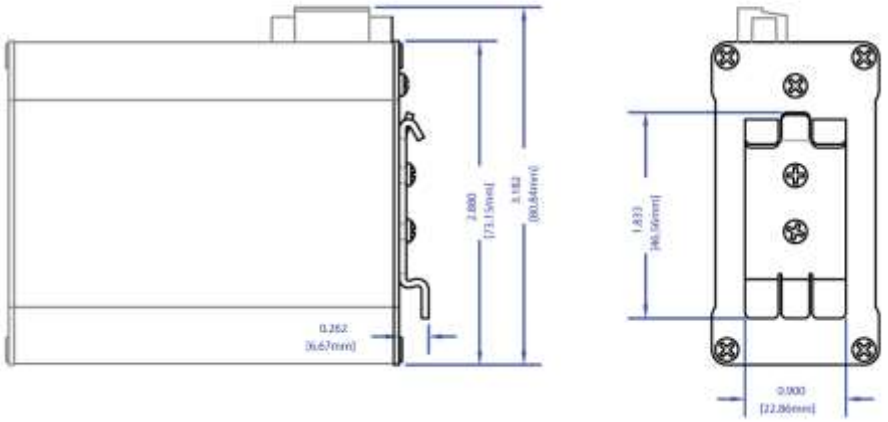
FCC Title 47 Part 15 Class A; ICES-003-Class A
CE: EN61000-6-2,4; EN61000-4-2,3,4,5,6; EN55011
UL Listed (US and Canada) per ANSI/ISA-12.12.01-2007, Class I, Div 2, Groups A,B,C,D,T4A
ABS Type Approval for Shipboard Applications
DNV-GL Type Approval Certification
EN50155 for Railway Applications
RoHS Compliant; GOST-R Certified

Designed to comply with:
IEEE 1613 for Electric Utility Substations;
and NEMA TS1/TS2 for Traffic Control Equipment

104TX with Standard DIN rail Mount



Optional 100-MDR-1 Metal DIN Rail Mount



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N-Tron® Series NT5006-DM2

Gigabit Managed Ethernet Switch

THE NT5006–DM2 GIGABIT INDUSTRIAL SWITCH SETS A NEW STANDARD FOR PERFORMANCE, RELIABILITY, AND EASE OF USE. THE SWITCH FEATURES A MODERN, GRAPHICAL USER INTERFACE WITH A QUICK START WIZARD TO GUIDE USERS THROUGH SWITCH CONFIGURATION. A LOGICAL VIEW OF THE SWITCH SHOWS ACTIVE PORTS, TEMPERATURE, ALARM AND LED STATUS, ALONG WITH PORT TRAFFIC AND EVENT GAUGES IN A SINGLE EASY TO READ DASHBOARD. FEATURES INCLUDE:

- Four 10/100/1000 RJ45 ports
- Two dual mode 100/1000Base SFP expansion slots; supports 100Base or 1000Base SFP transceivers
- Redundant 10–49 VDC power inputs
- High shock and vibration tolerance
- N-Ring™ auto-member and RSTP/MSTP network redundancy
- Password encryption, IEEE 802.1X, RADIUS, MAC filtering, syslog
- Advanced management and diagnostics features

c UL us LISTED E317425 · UKCA · CE · Ex · EN50155 · ABS · FC · e

Ordering Guide

MAIN UNIT

PART NUMBER	DESCRIPTION
NT-5006-DM2-0000	6-Port Gigabit Industrial Ethernet Switch (4 10/100/1000BaseT RJ45 Ports, 2 Dual Mode 100/1000Base SFP Expansion Slots)

Model number may be followed by –CC indicating conformal coating.

ACCESSORIES

PART NUMBER	DESCRIPTION
NT-CPMA-04-00000	NT5000 Panel Mount Kit, Type B (Narrow)
NTPS-24-1-3	DIN Rail Power Supply, 1.3 Amp @ 24 VDC
NTSFP-FX	100BaseFX Multimode Fiber SFP Transceiver (LC Style Connector, 2 km)
NTSFP-FXE-15	100BaseFX Singlemode Fiber SFP Transceiver (LC Style Connector, 15km)

\ NT5006-DM2 Ordering Guide and Specifications

PART NUMBER	DESCRIPTION
NTSFP-FXE-40	100BaseFX Singlemode Fiber SFP Transceiver (LC Style Connector, 40 km)
NTSFP-FXE-80	100BaseFX Singlemode Fiber SFP Transceiver (LC Style Connector, 80 km)
NTSFP-SX	1000BaseSX Multimode Fiber SFP Transceiver (LC Style Connector, 550 m)
NTSFP-LX-10	1000BaseLX Singlemode Fiber SFP Transceiver (LC Style Connector, 10 km)
NTSFP-LX-40	1000BaseLX Singlemode Fiber SFP Transceiver (LC Style Connector, 40 km)
NTSFP-LX-80	1000BaseLX Singlemode Fiber SFP Transceiver (LC Style Connector, 80 km)
NTSFP-TX	1000BaseT Copper SFP Transceiver (RJ45 Connector)

\ Specifications

HARDWARE

Compact, space saving, hardened industrial design
Wide operating temperature
High shock and vibration tolerance
  Shock: IEC 68-2-27: 200 g @ 10 ms Triaxial; non-operational; panel mounted
  Vibration: IEC 68-2-6: 15 g @ 5-200 Hz Triaxial; operational; panel mounted
Reverse polarity protection
ESD and surge protection
Fast boot (traffic passes <20 seconds)
Configurable alarm contact
Configurable bi-color fault status LED
LED port status indicators
Jumbo frame support
Redundant power inputs (10-49 VDC)
Hardened industrial design
IEEE 802.3 compliance
Full wire speed communication
MDIX auto-sensing cable
Auto-sensing speed and flow control
Up to 12.0 Gb/s maximum throughput
Store-and-forward technology
Number of MAC addresses: Up to 4k
Latency (typical): < 1.8 µs
MTBF: 1.5M Hours

MANAGEMENT

Modern, intuitive Web Interface
  Configuration wizard
  Graphical dashboard and logical view of the switch
Command Line Interface
Port control
IGMP v1/v2/v3 auto-configuration
SNMP v1/v2/v3
NTP
802.1Q tag VLAN and port VLAN
IEEE 802.1p QoS and port QoS
DHCP client
Text-based configuration file
File transfer: HTTP/HTTPS, TFTP, SNMP

SECURITY

SSH, SSL, HTTPS
MAC Filtering
IEEE 802.1X with RADIUS remote server authentication
Port/User lockout after failed authentication attempts
SNMPv3
Password encryption

DIAGNOSTIC

Port mirroring
Event log/Syslog
LLDP
Advanced cable diagnostics

NETWORK REDUNDANCY

RSTP/MSTP
Port trunking/LACP
N-Ring™ auto-member

MIBs

RFC 2674 VLAN MIB
RFC 2819 RMON (Group 1, 2, 3 & 9)
RFC 1213 MIB II
RFC 1215 TRAPS MIB
RFC 4188 Bridge MIB
RFC 4292 IP Forwarding Table MIB
RFC 4293 Management Information Base for the Internet Protocol (IP)
RFC 5519 Multicast Group Membership Discovery MIB
RFC 2863 Interface Group MIB using SMI v2
RFC 4133 Entity MIB version 3
RFC 3411 SNMP Management Frameworks
RFC 3414 User-based Security Model for SNMPv3
RFC 3415 View-based access Control Model for SNMP
IEEE 802.1AB LLDP-MIB
IEEE 802.1 MSTP MIB

SOFTWARE TOOL TO MANAGE/SCHEDULE FIRMWARE UPDATES

N-View™ 2

CERTIFICATION & COMPLIANCE

Product Safety: UL 61010 and C22.2 No. 61010 OrdLoc, UL 121201 and CSA C22.2 No. 213 Class I, Division 2 HazLoc, ATEX, IECEx and UKEx II 3 G Ex ec nC IIC T4 Gc, UL 20 ATEX 2645X, UL 22.0038X IECEx and UL22UKEX2346X
EMI/EMC: CFR 47, Part 15, Subpart B, Canada ICES-003, ANSI C63.4, EN 61000-6-2 and 4, IEC 61000-4-2, 3, 4, 5, 6 and 8
Shock & Vibration (panel mounted) - IEC 68-2-27: 200 g @ 10 ms

\ NT5006-DM2 Dimensions and Specifications

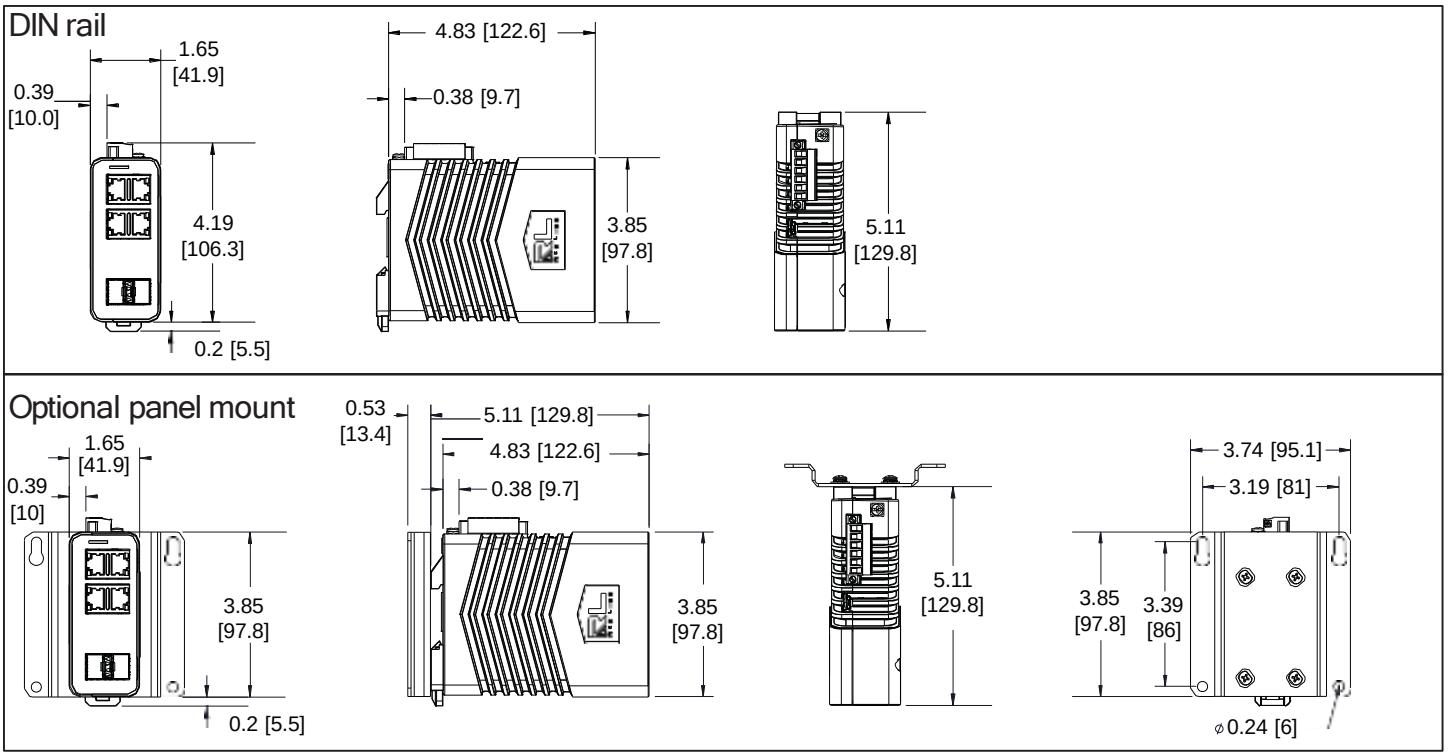
Triaxial; non-operational, IEC 68-2-6: 15 g @ 5-200 Hz Triaxial; operational
Railway/Rolling Stock - EN 50155, EN 50121 and EN 61373
Marine: ABS Type Approval for Shipboard Applications
DNV (pending)
Designed to Comply With - IEEE 1613 for Electric Utility Substations and NEMA TS1/TS2 for Traffic Control
Other – RoHS compliant

WARRANTY

3 years on design and manufacturing defects.

Specifications are subject to change.
Visit www.redlion.net for more information.

\ Dimensions In inches [mm]



NT5006-DM2 SPECIFICATIONS	
Weight	1.13 lbs. (0.51 kg)
Input Voltage Range	10-49 VDC
Steady Input Range	0.29 A @ 24 VDC
BTU/hr	23.75
Operating Temperature Range	-40 to 85 °C
Storage Temperature Range	-40 to 85 °C
Humidity (non-condensing)	10 to 95% RH
Operating Altitude	0 to 10,000 ft.

NETWORK MEDIA SPECIFICATIONS	
10BaseT	≥Cat3 Cable
100BaseTX	≥Cat5 Cable
1000BaseT	≥Cat5e Cable
100BaseFX, 1000BaseSX Multimode	50-62.5/125µm
100BaseFX, 1000BaseLX Singlemode	7-10/125µm

CONNECTORS	
10/100/1000BaseT	Four (4) RJ45 copper ports
Dual Mode 100/1000Base SFP Port	Up to two (2) SFP port transceivers (SFP transceivers sold separately)

RECOMMENDED MINIMUM WIRING CLEARANCE	
Front	4" (101.6 mm)
Top	4" (101.6 mm)

\ NT5006-DM2 Transceiver Characteristics

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

SFP 1000Base Fiber Transceiver Characteristics

Fiber Mode	MM	SM	SM	SM
Fiber Length*	550 m @ 50/125 µm 275 m @ 62.5/125 µm	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

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