

# 526FX2 Industrial Ethernet Switch

N-Tron Networking Series



## ▶▶▶ Rackmount Industrial Ethernet Switch

### PRODUCT FEATURES

- Full IEEE 802.3 and 1613 Compliance
- NEMA TS1/TS2 Compliance
- American Bureau of Shipping (ABS) Type Approval
- Twenty-four (24) 10/100 BaseTX RJ-45 Ports
- Two (2) 100BaseFX Port, ST (shown) or SC
- -40°C to 85°C Operating Temperature
- Auto Sensing 10/100BaseTX, Duplex, and MDIX
- Store-and-Forward Technology
- Up to 2.6 Gb/s Backplane Throughput
- Rugged Industrial 19" Rackmount\* 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® 524FX2 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 configured with advanced Ethernet communication management functions.

#### Industrial Packaging and Specifications

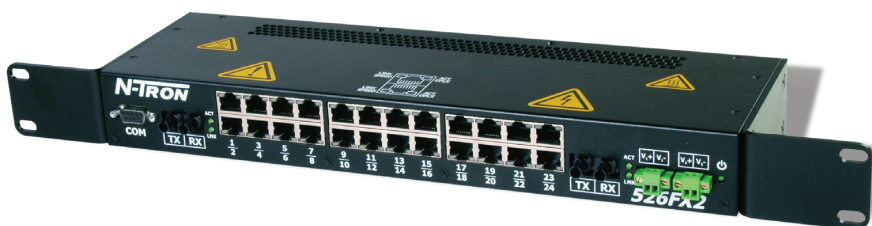
The 524FX2, designed to operate in industrial environments, is housed in a rugged rackmounted steel enclosure. The switch comes standard with extended temperature rating, extended shock and vibration specs, redundant power inputs, and a high MTBF (greater than 1M hours).

#### Ease of Use

The 526FX2 requires no setup unless the advanced port functions are utilized. The twenty-four 10/100BaseTX ports are auto sensing and auto configuring. Each copper port automatically negotiates for maximum speed and performance by default. The fiber 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 526FX2 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 provide outstanding throughput performance.



### ADVANCED MANAGEMENT FEATURES

The 526FX2-A offers several management functions that can be easily configured 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 filter multicast traffic.

**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 configured 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 traffic on one port to be duplicated and sent to a designated mirror port. This function can be used to monitor Ethernet traffic 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 traffic monitoring, as well as alarm and trending details. In all, the N-View OPC Server collects 41 different traffic variables per port and five system level variables per switch, providing a complete overview of network load, service quality, and packet traffic. Empowered with N-View OPC Server data, users can resolve network problems faster and make more informed decisions about overall system performance.

# ▶▶▶ 526FX2 Industrial Ethernet Switch Specifications

## Switch Properties

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

## Case Dimensions

Height - 1U: 1.8" (4.5 cm)  
Width: 19" (48.3 cm)  
Depth: 4.2" (10.6 cm)  
Weight: 3.7 lbs

## Electrical

Redundant Input Voltage: 10-30 VDC  
Input Current: 1 A @ 24 VDC  
BTU/hr: 81.9 @ 24 VDC  
Inrush: 9.5 amp / 0.75 ms @ 24 VDC  
N-Tron Power Supply: NTPS-24-3 (3 amps @ 24 VDC)

## 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: >1 Million Hours

## Serial Configuration Port

Com Parameters: 9600,n,8,1

## Network Media

10BaseT:  $\geq$ Cat3 Cable  
100BaseTX:  $\geq$ Cat5 Cable  
100BaseFX:  
*Multimode*: 50-62.5/125 $\mu$ m  
*Singlemode*: 7-10/125 $\mu$ m

## Connectors

10/100BaseTX: Twenty-four (24) 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**
<i>TX Power Min</i>	-19dBm	-15dBm	-5dBm	-5dBm
<i>RX Sensitivity Max</i>	-31dBm	-31dBm	-34dBm	-34dBm
<i>Wavelength</i>	1310nm	1310nm	1310nm	1550nm

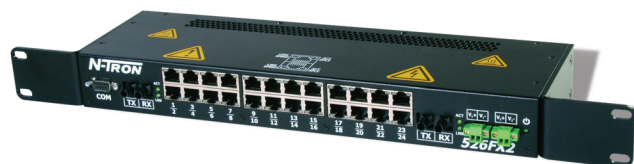
\* Multimode Fiber Optic Cable

\*\* Singlemode Fiber Optic Cable

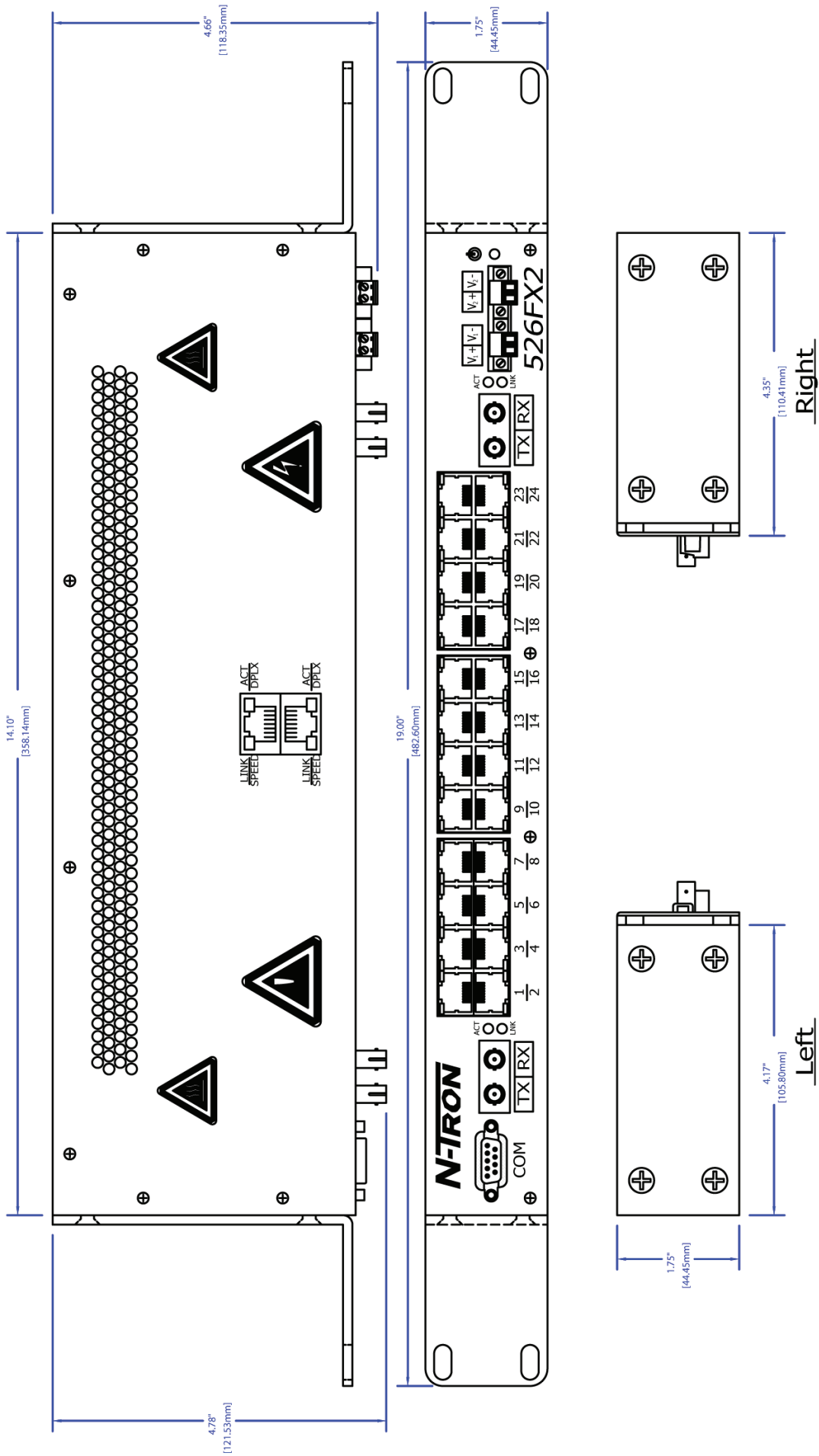
## Regulatory Approvals

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 Certified, RoHS Compliant

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



# 526FX2 Industrial Ethernet Switch Specifications



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## ORDERING INFORMATION

PART NUMBER	DESCRIPTION
526FX2-A-XX .....	26-port (24 10/100BaseTX, 2 100BaseFX Fiber Uplinks, Multimode) Industrial Ethernet Rackmount* Switch with Advanced Management Features (includes N-View)
526FXE2-A-XX-YY .....	26-port (24 10/100BaseTX, 2 100BaseFX Fiber Uplinks, Singlemode) Industrial Ethernet Rackmount* Switch with Advanced Management Features (includes N-View)
526FX2-N-XX .....	26-port (24 10/100BaseTX, 2 100BaseFX Fiber Uplinks, Multimode) Industrial Ethernet Rackmount* Switch with N-View OPC switch monitoring
526FXE2-N-XX-YY .....	26-port (24 10/100BaseTX, 2 100BaseFX Fiber Uplinks, Singlemode) Industrial Ethernet Rackmount* Switch with N-View OPC switch monitoring
526FX2-XX .....	26-port (24 10/100BaseTX, 2 100BaseFX Fiber Uplinks, Multimode) Industrial Ethernet Rackmount* Switch
526FXE2-XX-YY .....	26-port (24 10/100BaseTX, 2 100BaseFX Fiber Uplinks, Singlemode) Industrial Ethernet Rackmount* Switch
NTPS-24-3 .....	N-Tron Power Supply (3 amps @ 24 VDC)

Where:

- A = Advanced Management Features (includes N-View)
- N = N-View OPC Switch Monitoring
- E = Singlemode
- XX = ST for ST style fiber connector, SC for SC style fiber connector
- YY = Segment length:
  - 15 for 15km max. fiber segment length
  - 40 for 40km max. fiber segment length
  - 80 for 80km max. fiber segment length

\* Switch can also be panel mounted

