# 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
- -40ºC to 85ºC 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 µs |
| 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: | ≥Cat3 Cable |
| 100BaseTX: | ≥Cat5 Cable |
| 100BaseFX: | |
| *Multimode:* | 50-62.5/125µm |
| *Singlemode:* | 7-10/125µm |

## 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*** |
|---|---|---|---|---|
| *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 Certifi ed, RoHS Compliant

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

# 526FX2 Industrial Ethernet Switch Specifications

## 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

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