

## PRODUCT FEATURES

- Full IEEE 802.3 and 1613 Compliance
- NEMA TS1/TS2 Compliance
- American Bureau of Shipping (ABS) Type Approval
- Sixteen (16) 10/100 BaseTX RJ-45 Ports
- One (1) 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 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® 517FX 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 517FX, 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 517FX requires no setup unless the advanced port functions are utilized. The sixteen 10/100BaseTX ports are auto sensing and auto configuring. Each copper port automatically negotiates for maximum speed and performance by default. The fiber optic port supports 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 517FX 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 517FX-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.

## Specifications

### Switch Properties

|                          |                                |
|--------------------------|--------------------------------|
| Number of MAC Addresses: | 4,000                          |
| Aging Time:              | 300s, Programmable (-A option) |
| Latency Typical:         | 2.1 $\mu$ s                    |
| Switching Method:        | Store & Forward                |

### Case Dimensions

|           |                  |
|-----------|------------------|
| Height:   | 2.3" (5.8 cm)    |
| Width:    | 7.4" (18.8 cm)   |
| Depth:    | 3.5" (8.8 cm)    |
| Weight:   | 1.9 lbs (0.9 kg) |
| Din-Rail: | 35 mm            |

### Electrical

|                          |                              |
|--------------------------|------------------------------|
| Redundant Input Voltage: | 10-30 VDC                    |
| Input Current:           | 440 mA @ 24 VDC              |
| BTU/hr:                  | 36 @ 24 VDC                  |
| Inrush:                  | 8.5 amp/0.8 ms @ 24 VDC      |
| N-Tron Power Supply:     | NTPS-24-1.3 (1.3 A @ 24 VDC) |

### 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 and Vibration (bulkhead mounted)

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

### Reliability

|       |                  |
|-------|------------------|
| MTBF: | >2 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: | Sixteen (16) RJ-45 Copper Ports |
| 100BaseFX:    | One (1) SC or ST Duplex Port    |

### 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 |

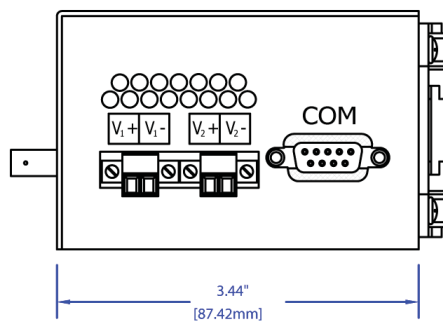
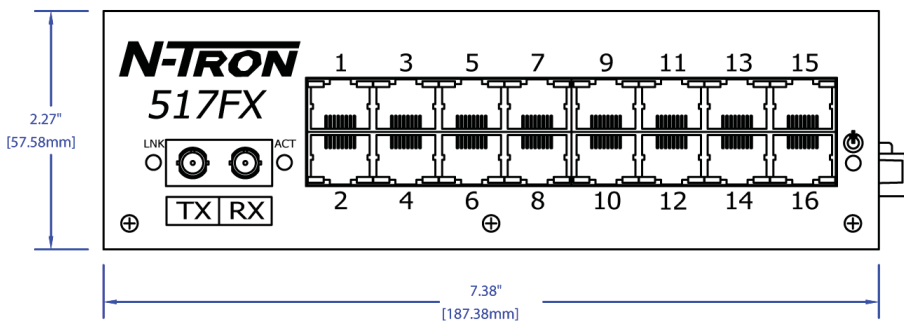
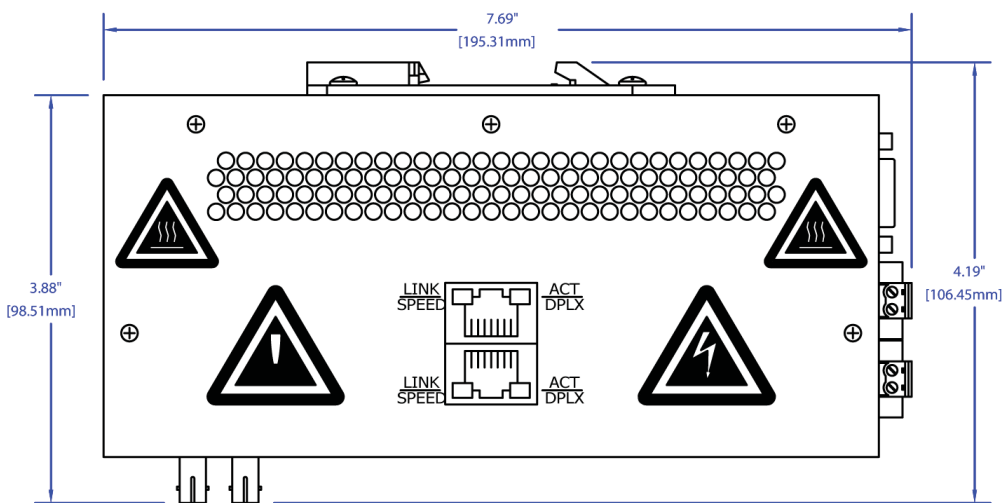
\* Multimode Fiber Optic Cable  
\*\* Singlemode Fiber Optic Cable

## 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





## ORDERING INFORMATION

| PART NUMBER          | DESCRIPTION                                                                                                                                              |
|----------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------|
| 517FX-A-XX .....     | 17-port (16 10/100BaseTX, 1 100BaseFX Fiber Uplink, Multimode) Industrial Ethernet Switch, DIN-Rail with Advanced Management Features (includes N-View)  |
| 517FXE-A-XX-YY ..... | 17-port (16 10/100BaseTX, 1 100BaseFX Fiber Uplink, Singlemode) Industrial Ethernet Switch, DIN-Rail with Advanced Management Features (includes N-View) |
| 517FX-N-XX .....     | 17-port (16 10/100BaseTX, 1 100BaseFX Fiber Uplink, Multimode) Industrial Ethernet Switch, DIN-Rail with N-View OPC switch monitoring                    |
| 517FXE-N-XX-YY ..... | 17-port (16 10/100BaseTX, 1 100BaseFX Fiber Uplink, Singlemode) Industrial Ethernet Switch, DIN-Rail with N-View OPC switch monitoring                   |
| 517FX-XX .....       | 17-port (16 10/100BaseTX, 1 100BaseFX Fiber Uplink, Multimode) Industrial Ethernet Switch, DIN-Rail                                                      |
| 517FXE-XX-YY .....   | 17-port (16 10/100BaseTX, 1 100BaseFX Fiber Uplink, Singlemode) Industrial Ethernet Switch, DIN-Rail                                                     |
| NTPS-24-1.3 .....    | N-Tron Power Supply (1.3 amp @ 24 VDC)                                                                                                                   |
| 900-PM .....         | Panel Mount Kit - converts switch from DIN-rail to panel mount.                                                                                          |
| URMK .....           | Universal Rack Mount Kit                                                                                                                                 |

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

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**QUALITY MANAGEMENT SYSTEM**  
**CERTIFIED BY DNV**  
**ISO 9001:2008**