

The N-TRON® 305FX is an unmanaged, five port Industrial Ethernet Switch. It is housed in a ruggedized DIN-RAIL enclosure and is designed for use in industrial data acquisition, control, and Ethernet I/O applications.

## PRODUCT FEATURES

- Compact Size, Small Footprint
- Full IEEE 802.3 and 1613 Compliance
- NEMA TS1/TS2 Compliance
- American Bureau of Shipping (ABS) Type Approval
- Extended Environmental Specifications
- Four 10/100 BaseTX RJ-45 Ports
- One 100BaseFX Port ST (shown) or SC
- RJ-45 Ports Support Full/Half Duplex Operation
- LED Link/Activity Status Indication
- Store-and-Forward Technology
- Auto Sensing Duplex, Speed and MDIX (RJ-45)
- Up to 1.0 Gb/s Maximum Throughput
- Rugged Industrial DIN-RAIL Enclosure
- Redundant Power Inputs (10-30 VDC)
- N-View™ OPC Switch Monitoring Option

## PRODUCT OVERVIEW

N-Tron's 305FX Industrial Network Switch is designed to meet and exceed the most demanding industrial communication requirements while providing high throughput and minimum downtime.

The 305FX provides four RJ-45 auto sensing 10/100BaseTX ports, plus a fiber based Fast Ethernet uplink port. All TX ports are full/half duplex capable, using state-of-the-art Ethernet switching technology. The 305FX auto-negotiates the speed and flow control capabilities of the four TX port connections, and configures itself automatically. The fiber optic port utilizes industry standard ST or SC duplex connectors and is configured for full duplex operation. Both multimode and singlemode fiber models are available.

The TX ports of the 305FX are auto sensing, so there will be no need to make extensive wiring changes due to future upgrades of host computers, plant systems, or Ethernet I/O modules. The switching fabric simply scales up or down automatically to match network environments.

The 305FX supports up to 4,000 MAC addresses, enabling these products to support extremely sophisticated and complex network architectures.

The 305FX is a candidate for upgrading existing hubs and repeaters to increase bandwidth and determinism by virtually eliminating network collisions. The product provides a cost effective solution while maintaining the plug & play simplicity of an unmanaged hub.



The 305FX can simplify plant wiring by eliminating the need to bring data acquisition and control network connections back to a climate controlled environment. The 305FX has extended operating environmental specifications to meet the harsh needs of the industrial environment. For cost savings and convenience the 305FX can be DIN-Rail mounted alongside Ethernet I/O or other industrial equipment.

The unique compact size provides a small footprint, conserving space in the most critical dimension. The 305FX can also be panel mounted if desired.

To increase reliability, the 305FX includes redundant power inputs. LED's are provided to display the link status and activity of each port, as well as power on/off status.

### N-VIEW OPC PORT MONITORING (With -N Option Only)

The N-TRON N-View OLE for Process Control (OPC) server software can be combined with popular HMI software packages to add network traffic monitoring, trending and alarming to any application using N-TRON switches configured with the N-View option. N-TRON's N-View OPC Server collects 41 different traffic variables per port and 5 system level variables per switch. This information can provide a complete overview of the network load, service quality, and packet traffic. OPC client software can use N-View OPC Server data to resolve network problems quickly and improve system reliability.

## SPECIFICATIONS

### Case Dimensions

Height:	3.5"	(8.9 cm)
Width:	2.1"	(5.4 cm)
Depth:	3.4"	(8.7 cm)
Weight:	0.75 lbs	(0.34 kg)

### Electrical

Input Voltage:	10-30 VDC
Input Current:	250 mA@24V
BTU/hr:	20.5@24 VDC
Inrush:	10Amp/0.9ms@24V

### Environmental

Operating Temperature:	-20°C to 70°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 mounting)

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

### Network Media

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

### Connectors

10/100BaseTX:	Four (1) RJ-45 TX Ports
100BaseFX:	One (1) ST or SC Duplex Port

### Recommended Wiring Clearance

Front:	4" (10.16 cm)
Top:	1" (2.54 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

## BENEFITS

### Industrial Network Switch

- Compact Size, Small Footprint
- High Reliability/Availability
- Extended Environmental Specifications
- Ruggedized DIN-Rail Enclosure
- High Performance
- High MTBF >2M Hours (measured)

### Ease of Use

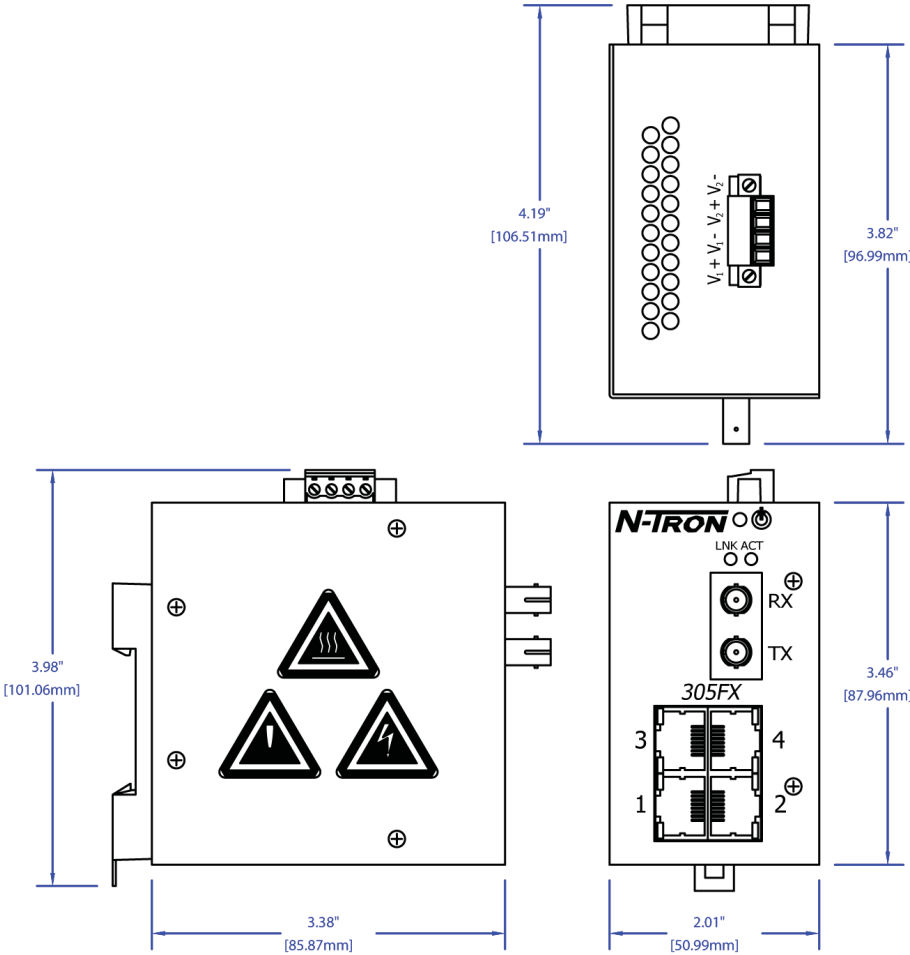
- Plug & Play Operation
- Four Auto Sensing 10/100BaseTX RJ-45 Ports
- Auto Sensing Duplex, Speed and Cable Type
- Unmanaged Operation
- Compact DIN-Rail Package

### Increased Performance

- Full Wire Speed Capable
- 100BaseFX Fiber Uplink
- Full Duplex Capable
- Eliminates Network Collisions
- Increases Network Determinism
- N-View Switch Viewing Option

### Regulatory Approvals

FCC Part 15 Class A  
 UL Listed 1604 (US and Canada)  
 CLASS I, DIV 2, GROUPS A,B,C,D,T4A  
 CE: EN61000-6-2,4, EN55011, EN61000-4-2,3,4,5,6  
 ABS Type Approval for Shipboard Applications  
 IEEE 1613 for Electric Utility Substations  
 GOST-R Certified  
 RoHS Compliant



## ORDERING INFORMATION

PART NUMBER	DESCRIPTION
305FX-XX.....	5-port (4 10/100BaseTX, 1 100Base Fiber Uplink) Industrial Ethernet Switch, DIN-Rail
305FX-N-XX.....	5-port (4 10/100BaseTX, 1 100Base Fiber Uplink) Industrial Ethernet Switch, DIN-Rail with N-View Firmware Option
305FXE-XX-YY.....	5-port (4 10/100BaseTX, 1 100Base Fiber Uplink) Industrial Ethernet Switch, DIN-Rail
305FXE-N-XX-YY.....	5-port (4 10/100BaseTX, 1 100Base Fiber Uplink) Industrial Ethernet Switch, DIN-Rail with N-View Firmware Option

Where: N = N-View Firmware Option  
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**