316TX-N Industrial Ethernet Switch

N-Tron Networking Series

red lion®

▶▶▶ Unmanaged Industrial Ethernet Switch

The N-TRON® 316TX-N, an unmanaged Industrial Ethernet switch, is designed for use in industrial data acquisition, control, and Ethernet I/O applications. The rugged DIN-RAIL enclosure protects the switch from harsh environmental conditions, enabling flawless performance in extreme settings.

PRODUCT FEATURES

• Compact Size

• Full IEEE 802.3 and 1613 Compliance

• NEMA TS1/TS2 Compliance

• Extended Environmental Specifications

• Sixteen 10/100 BaseTX RJ-45 Ports

• Supports Full/Half Duplex Operation

• LED Link/Activity Status Indication

• Store-and-Forward Technology

• Auto Senses Speed and Flow Control

• MDIX Auto Cable Sensing (RJ-45)

• Up to 2.6 Gb/s Maximum Throughput

• Rugged Industrial DIN-Rail Enclosure

• Redundant Power Inputs (10-30 VDC)

• N-View™ OPC Switch Monitoring Option

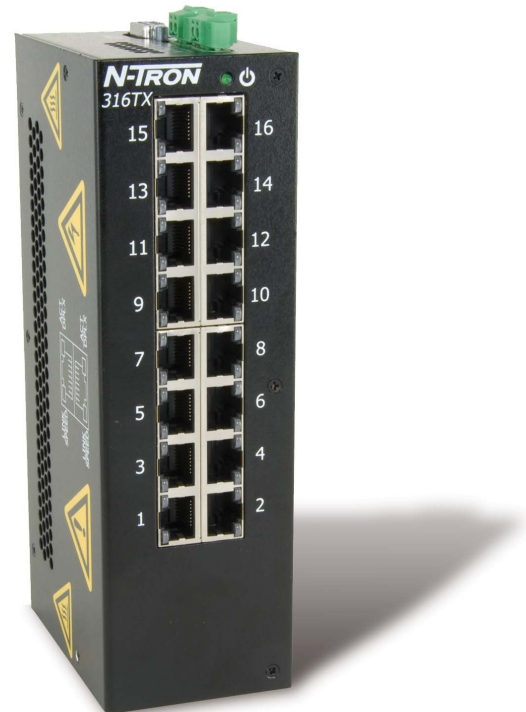• Bi-Color Status LEDs For Link, Speed, Activity & Duplex

• Port Control

PRODUCT OVERVIEW

The 316TX-N switch is designed to meet and exceed the most demanding industrial communication requirements while providing high throughput and minimum downtime.

The 316TX-N provides sixteen RJ-45 auto sensing 10/100BaseTX ports. All ports are full/half duplex capable, using leading-edge Ethernet switching technology. The switch auto-negotiates the speed and flow control capabilities of the TX copper port connection, and configures itself automatically. Bi-color LEDs are provided to display the link status, speed and activity of each port as well as power on/off status.

The 316TX-N is auto sensing, so there is no need to make extensive wiring changes if upgrades are made to host computers, plant systems, or Ethernet I/O modules. The switching fabric simply scales up or down automatically to match network environments. The device supports up to 4,000 MAC addresses, enabling these products to support extremely sophisticated and complex network architectures.

The 316TX-N is an ideal 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 switch simplifies plant wiring by eliminating the need to bring data acquisition and control connections back to a climate controlled environment.

The 316TX-N switch has extended operating specifications to meet the harsh needs of the industrial environment, including extended temperature rating, extended shock and vibration specs, redundant power inputs, and a high MTBF (greater than 2M hours).

For cost savings and convenience, the 316TX-N can be DIN-RAIL mounted alongside Ethernet I/O or other Industrial Equipment. It can also be panel mounted. To increase reliability, the 316TX-N contains redundant power inputs. LED's are provided to display power on/off status as well as the link status and activity of each port.

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 five 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.

industrial
networking

Specifications

Switch Properties

Number of MAC Addresses:	4,000
Latency (typical):	2.1 µs
Backplane Speed:	2.6 Gb/s
Switching Method:	Store & Forward

Case Dimensions

Height:	7.4"	(18.8cm)
Width:	2.3"	(5.8cm)
Depth:	3.5"	(8.9cm)
Weight:	1.9 lbs	(0.9kg)
Din-Rail:	35mm	

Electrical

Redundant Input Voltage:	10-30 VDC
Input Current:	400 mA@24V
Inrush:	7.0Amp/0.8ms@24V
BTU/hr:	21.3@24V

Environmental

Operating and Storage Temp:	-40ºC to 85ºC
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

Reliability

MTBF:	>2 Million Hours

Network Media

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

Connectors

10/100BaseTX:	Sixteen (16) RJ-45 Copper Ports

Serial Configuration Port

Com Parameters:	9600,n,8,1

Recommended Wiring Clearance

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

Regulatory Approvals

FCC (CFR 47, Part 15, Subpart B, Class A and ANSI C63.4)
ICES-003
CE (IEC 60068: 2-1/2/6/30 and IEC 60533-7)
UL/cUL: Class I, Div 2, Groups A, B, C, and D; T4
(ANSI/ISA 12.12.01-2007)
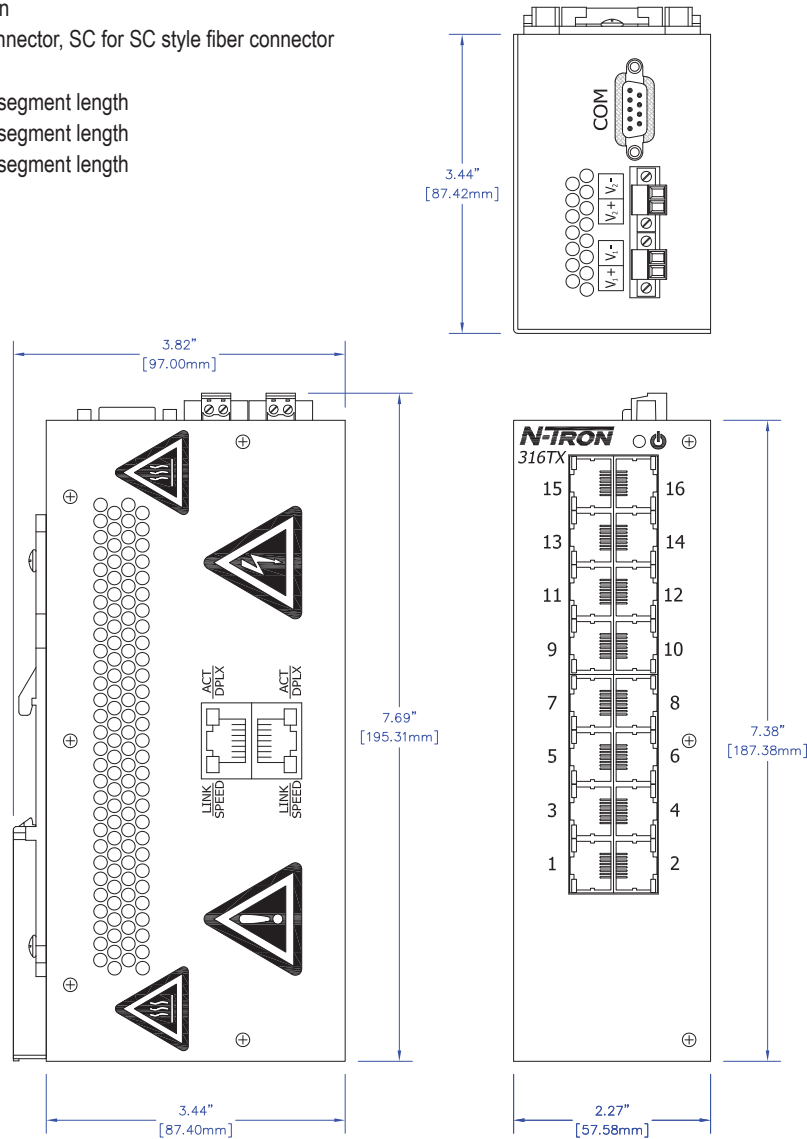GOST-R Certified, RoHS Compliant

Designed to comply with:

EN 60079-0/15 ATEX
IACS UR E10 (ABS Type-Approval)
IEC 61850-3 and IEEE 1613 (Elec. Power Sub-stations)
NEMA TS1/TS2 for Traffic Control

ORDERING INFORMATION

PART NUMBER   DESCRIPTION

316TX... 16-port 10/100BaseTX, Industrial Ethernet Switch, DIN-Rail

316TX-N .... 16-port 10/100BaseTX, Industrial Ethernet Switch, DIN-Rail with N-View

URMK .... 19" Universal Rack Mount Kit

900-PM .... Panel Mount Kit

NTPS-24.1.3 .... N-TRON Power Supply (1.3 amp@24 VDC)

Where: N = N-View Firmware Option
           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

COM

3.44"
[87.42mm]

V+ V-
V+ V-

3.82"
[97.00mm]

ACT
DPLX

ACT
DPLX

LINK
SPEED

LINK
SPEED

7.69"
[195.31mm]

3.44"
[87.40mm]

N-TRON
316TX

15   16
13   14
11   12
9   10
7   8
5   6
3   4
1   2

7.38"
[187.38mm]

2.27"
[57.58mm]

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