104TX Industrial Ethernet Switch
N-Tron Networking Series

►►► Unmanaged Industrial Ethernet Switch

The *N-TRON® 104TX* is a low cost unmanaged four port Industrial Ethernet Switch. It is housed in a hardened, metal, DIN-Rail enclosure, and is designed for use in mission critical data acquisition, control, and Ethernet I/O applications.

PRODUCT FEATURES

- Compact, Space Saving Package
- Full IEEE 802.3 Compliance
- American Bureau of Shipping (ABS) Type Approval
- EN50155 for Railway applications
- Four 10/100BaseTX RJ-45 Ports
- Unmanaged Operation
- Extended Environmental Specifications
  - -40ºC to 80º Operating Temperature
  - >2M Hours MTBF
- Supports Full/Half Duplex Operation
- Up to 800 Mb/s Maximum Throughput
- MDIX Auto Sensing Cable
- Auto Sensing Speed and Flow Control
- Full Wire Speed Communications
- Store-and-forward Technology
- Redundant Power Inputs (10-30 VDC)
- LED Link/Activity Status Indication
- Hardened Metal DIN-Rail Enclosure

PRODUCT OVERVIEW

The *104TX* Industrial Network Switch is designed to solve the most demanding industrial communication requirements while providing high throughput and minimum downtime.

The *104TX* provides four RJ-45 auto sensing 10/100BaseTX ports. All ports are full/half duplex capable, using "state of the art" Ethernet switching technology. The *104TX* auto-negotiates the speed and flow control capabilities of the four TX port connections, and configures itself automatically.

Since the *104TX* is auto sensing, there will be no need to make extensive wiring changes if upgrades are made to the host computers, plant systems, or Ethernet I/O modules. The switching fabric simply scales up or down automatically to match specific network environments.

The *104TX* supports up to 2,000 MAC addresses, enabling these products to support extremely sophisticated and complex network architectures.

The *104TX* is an ideal candidate for upgrading existing hubs and repeaters to increase bandwidth and determinism by virtually eliminating network collisions. The *N-TRON 104TX* combines affordability and the plug & play simplicity of the unmanaged hub.

The *104TX* can simplify plant wiring by eliminating the need to bring data acquisition and control network connections back to a climate controlled environment. The *104TX* has extended operating environmental specifications to meet the harsh needs of the industrial environment. For cost savings and convenience the network switch can be DIN-Rail mounted alongside Ethernet I/O or other Industrial Equipment.

To increase reliability the *104TX* provides dual redundant power inputs. LED's are provided to display the link status and activity of each port.

104TX SPECIFICATIONS

Case Dimensions

Height:	2.9"	(7.3cm)
Width:	1.5"	(3.8 cm)
Depth:	3.6"	(9 cm)
Weight:	0.6 lbs.	(0.28 kg)
DIN-Rail:	35mm	

Electrical

Input Voltage:	10-30 VDC
Steady Input Current:	215mA@24V
Inrush:	7.8Amp/0.7ms@24V

Environmental

Operating Temperature:	-40°C to 80°C
Storage Temperature:	-40°C to 85°C
Operating Humidity:	10% to 95% (Non Condensing)
Operating Altitude:	0 to 10,000 ft.

Reliablity

MTBF:	>2 Million Hours

Network Media

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

Connectors

10/100BaseTX:	Four (4) RJ-45 TX Copper Ports

Recommended Wiring Clearance

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

Ordering Information

104TX	Four 10/100BaseTX Ports
NTPS-24-1.3	DIN-Rail Power Supply 24V@1.3 Amp
100-MDR-1	Metal Din Rail Option*

* MDR option must be specified with switch order - not field upgradable

BENEFITS

Industrial Network Switch
- Compact Size / Small Footprint
- Extended Environmental Specifications
- Hardened Metal DIN-Rail Enclosure
- High Performance
- High MTBF >2M Hours
- ESD Protection Diodes on RJ-45 Ports
- Surge Protection Diodes on Power Inputs

Ease of Use
- Plug & Play Operation
- Auto Sensing 10/100BaseTX
- Auto Negotiation Full/Half Duplex
- MDIX Auto Cable Sensing
- Unmanaged Operation

Increased Performance
- Full Wire Speed Capable
- Full Duplex Capable
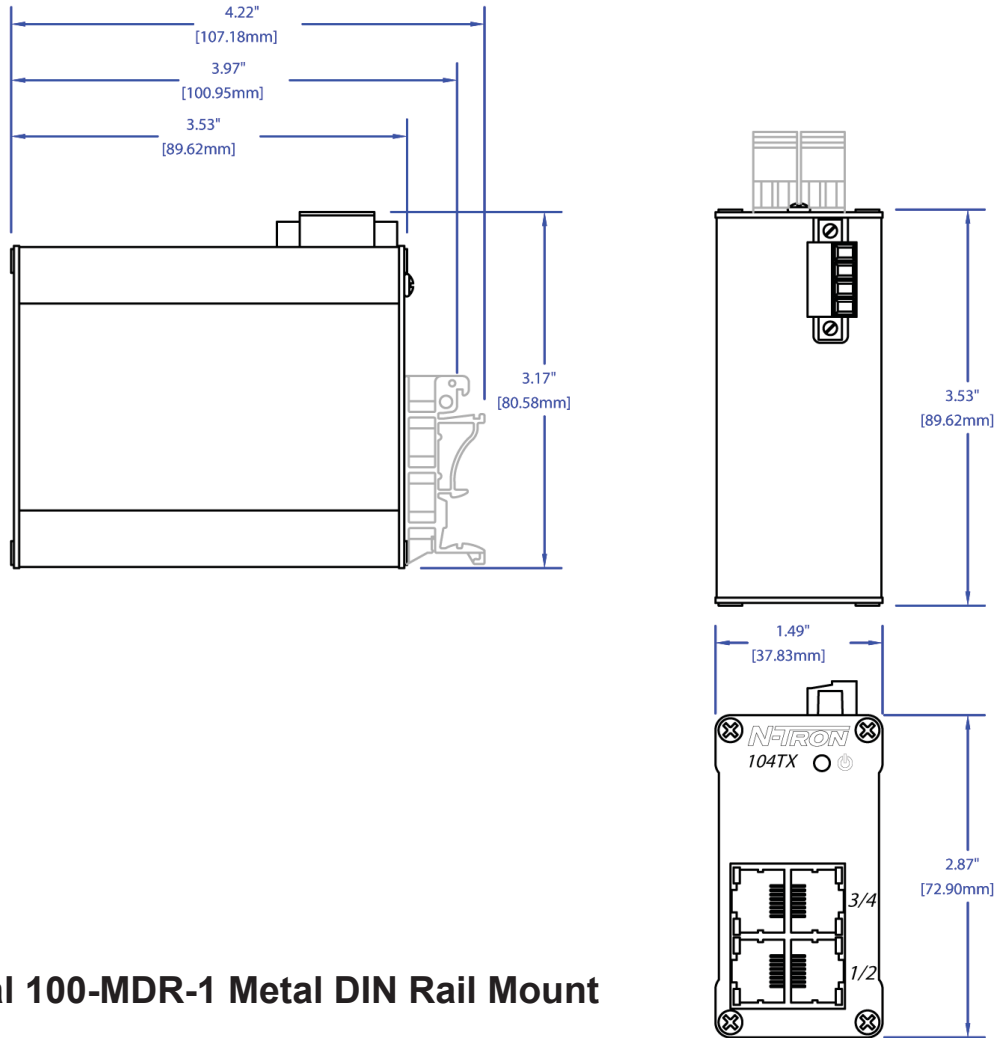- Eliminates Network Collisions
- Increases Network Determinism

Regulatory Approvals
FCC Title 47 Part 15 Class A; ICES-003-Class A
CE: EN61000-6-2,4; EN61000-4-2,3,4,5,6; EN55011
UL Listed (US and Canada) per ANSI/ISA-12.12.01-2007, Class I, Div 2, Groups A,B,C,D,T4A
ABS Type Approval for Shipboard Applications
DNV-GL Type Approval Certification
EN50155 for Railway Applications
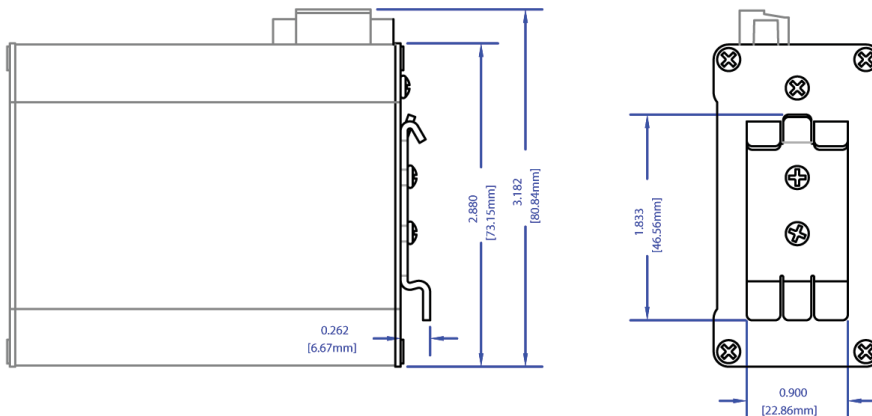*RoHS Compliant; GOST-R Certified*

Designed to comply with:
IEEE 1613 for Electric Utility Substations;
and NEMA TS1/TS2 for Traffic Control Equipment

104TX with Standard DIN rail Mount

4.22"
[107.18mm]

3.97"
[100.95mm]

3.53"
[89.62mm]

3.17"
[80.58mm]

3.53"
[89.62mm]

1.49"
[37.83mm]

N-TRON

104TX

2.87"
[72.90mm]

3/4

1/2

Optional 100-MDR-1 Metal DIN Rail Mount

2.880
[73.15mm]

3.182
[80.84mm]

0.262
[6.67mm]

1.833
[46.56mm]

0.900
[22.86mm]

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