

# 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
  - -40°C to 80° 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%<br>(Non Condensing) |
| Operating Altitude:    | 0 to 10,000 ft.                |

### **Reliability**

|       |                  |
|-------|------------------|
| MTBF: | >2 Million Hours |
|-------|------------------|

### **Network Media**

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

### **Connectors**

|               |                                   |
|---------------|-----------------------------------|
| 10/100BaseTX: | Four (4) RJ-45 TX<br>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**

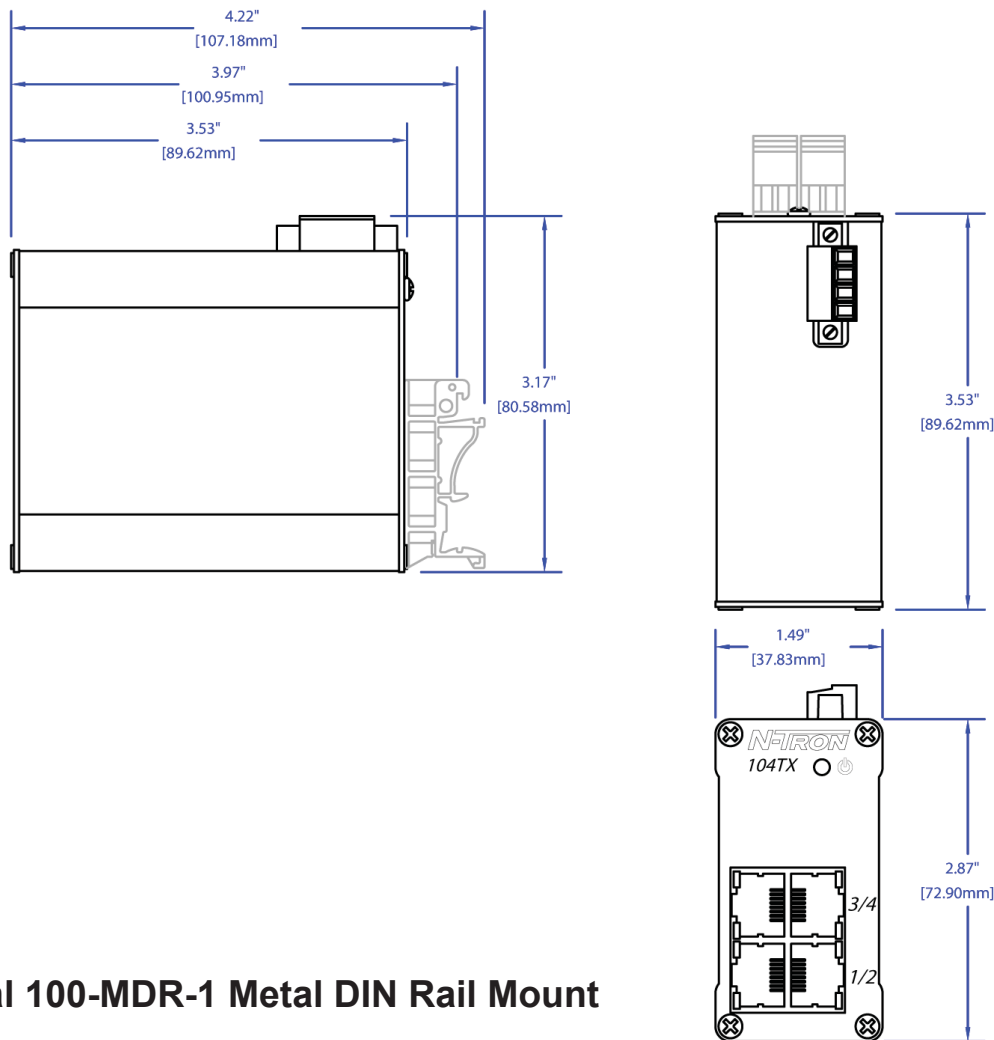
- Full Wire Speed Capable
- Full Duplex Capable
- Eliminates Network Collisions
- Increases Network Determinism

### **Regulatory Approvals**

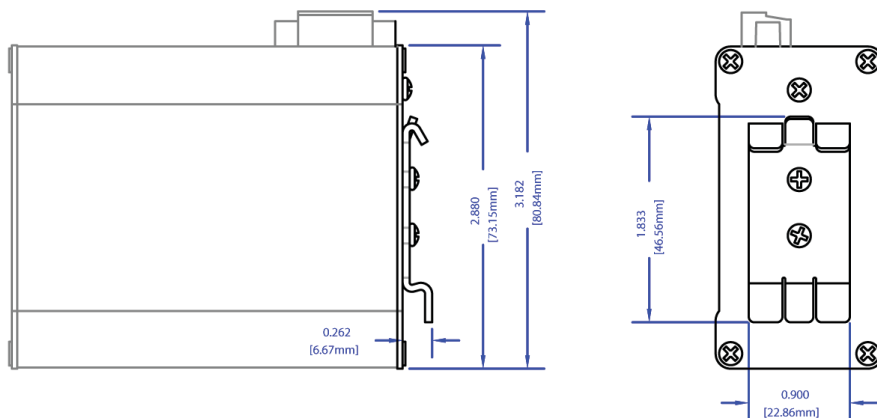
*FCC Title 47 Part 15 Class A; ICES-003-Class A  
CE: EN61000-6-2,4; EN61000-4-2,3,4,5,6; EN55011  
UL Listed (US and Canada) per ANSI/ISA-12.12.01-2007,  
Class I, Div 2, Groups A,B,C,D,T4A  
ABS Type Approval for Shipboard Applications  
DNV-GL Type Approval Certification  
EN50155 for Railway Applications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



## Optional 100-MDR-1 Metal DIN Rail Mount



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