

# 105FX-POE Industrial Ethernet Switch

N-Tron Networking Series



## ▶▶▶ Unmanaged Industrial Ethernet Switch

The N-Tron® 105FX-POE Unmanaged Industrial Ethernet Switch is designed to transmit power along with data over an Ethernet network. It is ideal for PoE capable devices where running an AC power feed is either not possible or cost effective. This allows an end user to power a PoE camera, wireless access point, or any other PoE capable device without the need for running separate wires for power. This also makes it possible to utilize a centralized battery backup for all these devices.

### PRODUCT FEATURES

- Compact, Space Saving Package
- Full IEEE 802.3 and 802.3af Compliance
- American Bureau of Shipping (ABS) Type Approval
- Certified for Rail Applications
- Four 10/100BaseTX RJ-45 Ports (4 Mode A PoE Ports)
- One 100BaseFX Port with ST or SC Connectors
- Unmanaged Operation
- Extended Environmental Specifications
  - -40°C to 85° Operating Temperature
- Automatic Detection of Connected PoE Devices
- Support for Full/Half Duplex Operation
- Auto-sensing Duplex, Speed, and MDIX (RJ-45)
- Up to 1.0 Gb/s Maximum Throughput
- Full Wire Speed Communications
- Supports 15.4 Watts per port (13 Watts at the PD)
- Redundant Power Inputs (46-49 VDC)
- Power Fault Status LED's
- LED Link/Activity Status Indication
- LED PoE Status Indication
- Hardened Metal DIN-Rail Enclosure

### PRODUCT OVERVIEW

The 105FX-POE Industrial Network Switch is designed to meet the most demanding industrial communications requirements by providing high throughput and minimum downtime while also providing power to PoE capable devices over the Ethernet network.

The 105FX-POE provides four RJ-45 auto sensing 10/100BaseTX ports. All ports are full/half duplex capable, using "state of the art" Ethernet switching technology. All four RJ-45 ports also act as PoE ports allowing power to pass through four of the eight strands of CAT5 cable. Each PoE port supports up to 15.4 watts of power. The 5th port is a 100BaseFX fiber optic uplink utilizing industry standard ST or SC duplex connectors.



The 105FX-POE auto-negotiates the speed and flow control capabilities of the four TX port connections, and configures itself automatically.

The N-Tron 105FX-POE also supports up to 2,000 MAC addresses, enabling these products to support extremely sophisticated and complex network architectures.

The 105FX-POE automatically detects any PoE device that is connected and powers it accordingly. If a PoE fault is detected on a specific port the Auto-disconnect feature disables PoE power on that port, allowing only data communications to pass, reducing the risk of damaging costly equipment.

The 105FX-POE is an ideal candidate for providing data and power to wireless LAN access points, network cameras, VoIP, and other PoE capable devices. The product also helps reduce costs by eliminating the need for electrical wiring and electrician expenses.

The 105FX-POE 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 105FX-POE provides dual redundant power inputs. Two power LED's are also provided on this unit indicating a valid power source on both the redundant power inputs and also indicating when a power fault bus occurs.

## 105FX-POE SPECIFICATIONS

### Case Dimensions

Height:	3.5"	(9.7cm)
Width:	1.5"	(3.8 cm)
Depth:	3.6"	(9.0cm)
Weight:	0.7 lbs.	(0.3 kg)
DIN-Rail:	35mm	

### Electrical

Input Voltage:	46-49 VDC	
Steady Input Current	1.6 A@48V Under Full Load	
Steady Input Current with	65mA@48V	
	No PoE, Switch Full Load	
BTU/hr:	262.11@24VDC (Full Load)	
Inrush:	26Amp/1.3ms@48V	

### 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.

### Network Media

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

### Connectors

10/100BaseTX+PoE:	Four (4) RJ-45 TX/PoE Copper Ports
100BaseFX:	One (1) ST or SC Duplex Port

### Recommended Wiring Clearance

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

### 100 Mb 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

### PoE Industrial Network Switch

- Compact Size / Small Footprint
- Ability to Power Devices via LAN
- Eliminates need for Costly Electrical Wiring
- 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 Sensing Full/Half Duplex
- MDIX Auto Cable Sensing
- Unmanaged Operation
- Auto-Detection of PoE Capable Devices
- Redundant Power Status LED's

### Increased Performance

- Full Wire Speed Capable
- Full Duplex Capable
- Eliminates Network Collisions
- Increases Network Determinism
- Auto-Disconnect of PoE Port if Fault is Detected

### 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) UL508 and ANSI/ISA-12.12.01-2007, Class I, Div 2, Groups A,B,C,D,T4*

*UL Listed (Canada) C22.2 No. 14-M05, C22.2 No. 213-M1987 Class I, Div 2, Haz Loc.*

*ABS Type Approval for Shipboard Applications*

*DNV Type Approval Certification*

*EN50155, EN50121 and EN61373 for Railway Applications*

*GOST-R Certified; RoHS Compliant*

### Designed to comply with:

*IEEE 1613 for Electric Utility Substations*

*and NEMA TS1/TS2 for Traffic Control Equipment*

### Ordering Information

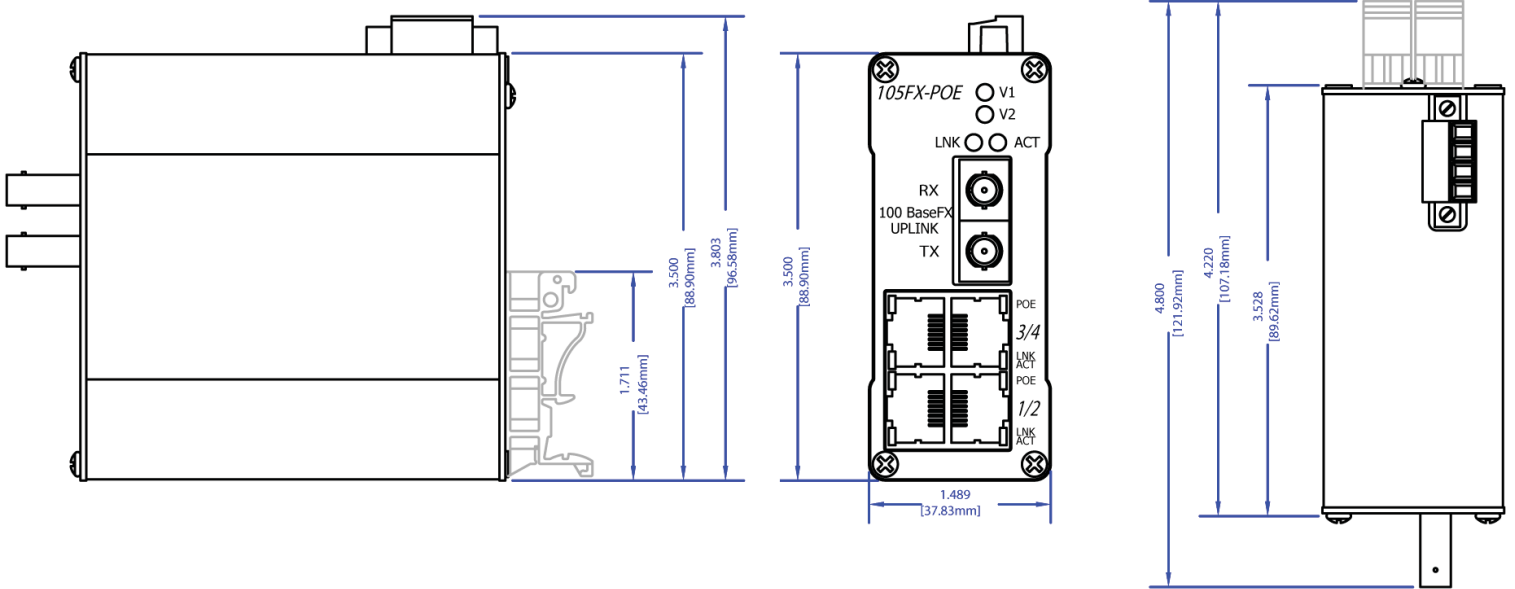
105FX-XX-POE	Four 10/100BaseTX PoE Ports, One 100BaseFX Multimode Port
105FXE-XX-YY-POE	Four 10/100BaseTX Poe Ports, One 100BaseFX Singlemode Port
NTPS-48-5	DIN-Rail Power Supply 48V@ 5 Amp
105FX-XX-POE-MDR*	Four 10/100BaseTX PoE ports, One 100BaseFX multimode port; with Metal DIN Rail Options
105FXE-XX-YY-POE-MDR*	Four 10/100BaseTX PoE ports, One 100BaseFX multimode port; with Metal DIN Rail Options

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

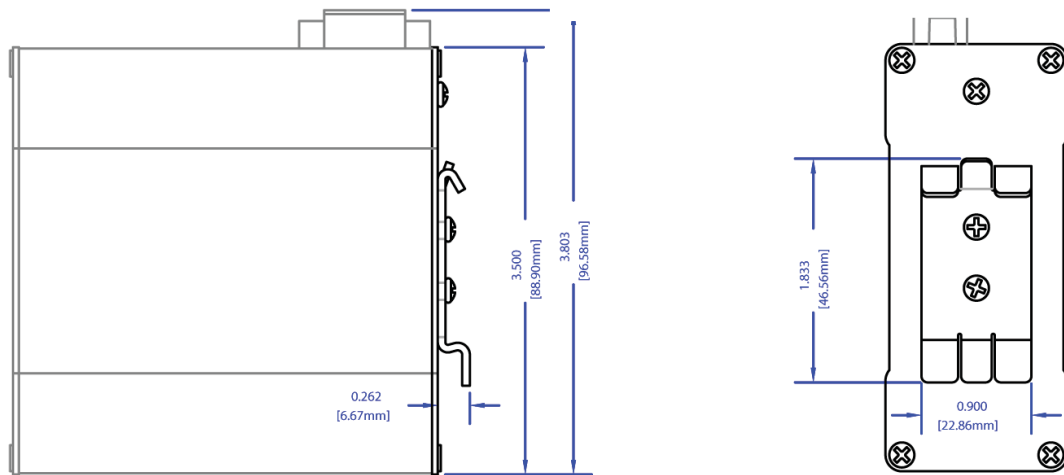
Where "XX" is:  
ST for ST style fiber connector  
SC for SC style fiber connector

Where "YY" is:  
15 for 15km max. fiber segment length  
40 for 40km max. fiber segment length  
80 for 80km max. fiber segment length

### 105FX-POE with Standard DIN rail Mount



### Optional 100-MDR-2 Metal DIN Rail Mount



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