

The *105FX* is a low cost, unmanaged five port Industrial Ethernet Switch. It is housed in a hardened, metal, DIN-Rail enclosure, and is designed for use in industrial data acquisition, control, and Ethernet I/O applications.

## PRODUCT FEATURES

- Compact Size, Smaller Footprint
- Unmanaged Operation
- Full IEEE 802.3 Compliance
- Four 10/100BaseTX RJ-45 Ports
- One 100BaseFX Port with ST or SC Connectors
- Extended Environmental Specifications
  - -40°C to 70°C Operating Temperature
  - >2M Hours MTBF
- RJ-45 Ports Support Full/Half Duplex Operation
- Auto Sensing Duplex, Speed, and MDIX (RJ-45)
- Up to 1.0 Gb/s Maximum Throughput
- Store-and-forward Technology
- LED Link/Activity Status Indication
- Redundant Power Inputs (10-30 VDC)
- Hardened Metal DIN-Rail Enclosure

## PRODUCT OVERVIEW

The *N-TRON*® *105FX* Industrial Network Switch is designed to solve the most demanding industrial communications requirements while providing high throughput and minimum downtime.

The *105FX* 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 *105FX* auto-negotiates the speed and flow control capabilities of the four TX port connections, and configures itself automatically. The 5th port is a 100BaseFX fiber optic uplink utilizing industry standard ST or SC duplex connectors.

Since the TX ports of the *105FX* are 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 your specific network environment.



The *105FX* supports up to 2,000 MAC addresses, thus enabling these products to support extremely sophisticated and complex network architectures.

The *N-TRON 105FX* is an ideal candidate for upgrading existing hubs and repeaters to increase bandwidth and determinism by virtually eliminating network collisions. The product also keeps the network affordable, while maintaining the plug & play simplicity of the unmanaged hub. The *105FX* can simplify plant wiring by eliminating the need to bring data acquisition and control network connections back to a climate controlled environment.

The *105FX* has extended operating environmental specifications to meet the harsh needs of the industrial environment. For cost savings and convenience the *105FX* can be DIN-Rail mounted alongside Ethernet I/O or other industrial equipment. The unique compact size provides a smaller footprint, conserving space in the most critical dimension.

To increase reliability, the *105FX* contains redundant power inputs. LEDs are provided to display the link status and activity of each port, as well as power on/off status.

## BENEFITS

### Industrial Network Switch

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

### Ease of Use

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

### Increased Performance

- Full Wire Speed Capable
- 100BaseFX Fiber Uplink
- Full Duplex Capable
- Eliminates Network Collisions
- Increases Network Determinism

## Contact Information

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## Ordering Information

105FX-XX	100BaseFX multimode fiber
105FXE-XX-YY	100BaseFX singlemode fiber
NTPS-24-1.3	DIN-Rail Power Supply 24V@1.3 Amp

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

## SPECIFICATIONS

### Physical

Height:	3.83" (9.73 cm)
Width:	1.50" (3.81 cm)
Depth Incl. DIN-Rail Clip:	4.80" (12.2 cm)
Weight:	0.60 lbs. (0.27 kg)
DIN-Rail:	35mm

### Electrical

Input Voltage:	10-30 VDC
Input Current:	270mA @24V
Inrush:	8.0Amp/0.7ms@24V

### Environmental

Operating Temperature:	-40°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.

### Network Media

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

## Fiber Transceiver Characteristics

Fiber Length	2km*	15km**	40km**	80km**
TX Power Min	-19dBm	-15dBm	-5dBm	-5dBm
RX Sensitivity Max	-32dBm	-34dBm	-34dBm	-34dBm
Wavelength	1310nm	1310nm	1310nm	1550nm

\* Multimode Fiber Optic Cable \*\* Singlemode Fiber Optic Cable

## Connectors

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

## Recommended Wiring Clearance

Front:	5" (12.7 cm)
Top:	1" (2.54 cm)

## Regulatory Approvals

FCC Title 47 Part 15 Class A, ICES-003-Class A,  
CE: EN61000-6-2,4, EN55011, EN61000-4-2,3,4,5,6  
UL Listed (US and Canada) per ANSI/ISA-12.12.01-  
2000, CLASS I, DIV 2, GROUPS A,B,C,D,T4A,  
Designed to comply with:  
IEEE 1613 for Electric Utility Substations,  
ABS Type Approval for Shipboard Applications,  
and NEMA TS1/TS2 for Traffic Control Equipment