N-TRON
THE INDUSTRIAL NETWORK COMPANY

105FX

The *N-TRON® 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, Small Footprint
- Full IEEE 802.3 Compliance
- American Bureau of Shipping (ABS) Type Approval
- EN50155 for Railway applications
- Four 10/100BaseTX RJ-45 Ports
- Unmanaged Operation
- One 100BaseFX Port with ST or SC Connectors
- Extended Environmental Specifications
  - -40ºC to 70ºC Operating Temperature
  - >2M Hours MTBF
- RJ-45 Ports Support Full/Half Duplex Operation
- Auto Sensing Duplex, Speed, and MDIX (RJ-45)
- Up to 1.0Gb/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 *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 specific network environments.

The *105FX* supports up to 2,000 MAC addresses, 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 *N-TRON 105FX* combines affordability and 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 small 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.

105FX SPECIFICATIONS

Case Dimensions
Height:	3.2"	(8.1 cm)
Width:	1.5"	(3.8 cm)
Weight:	0.6 lbs.	(0.28 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.

Shock and Vibration (bulkhead mounted)
Shock:	200g @ 10ms
Vibration/Seismic:	50g, 5-200Hz, Triaxial

Reliablity
MTBF:	>2 Million Hours

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

100 Mb Fiber Transceiver Characteristics
Fiber Length	2km*	15km**	40km**	80km**
TX Power Min	-19dBm	-15dBm	-5dBm	-5dBm
RX Sensitivity Max	-32dBm	-29dBm	-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)

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

BENEFITS

Industrial Network Switch
- Compact Size, Small 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

Regulatory Approvals
FCC/CE (CFR 47, Part 15, Subpart B, Class A)
UL /cUL: Class I, Div 2, Groups A, B, C, D and T4A
ANSI/ISA 12.12.01-2007
EN 55011, ICES-003- Class A
EN61000-4-2/3/4/5/6/8/11, EN61000-6-2/4
ABS Type Approval for Shipboard Applications
DNV Type Approval Certification
GOST-R Certified, RoHS Compliant
EN50155 for Railway Applications

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

Contact Information

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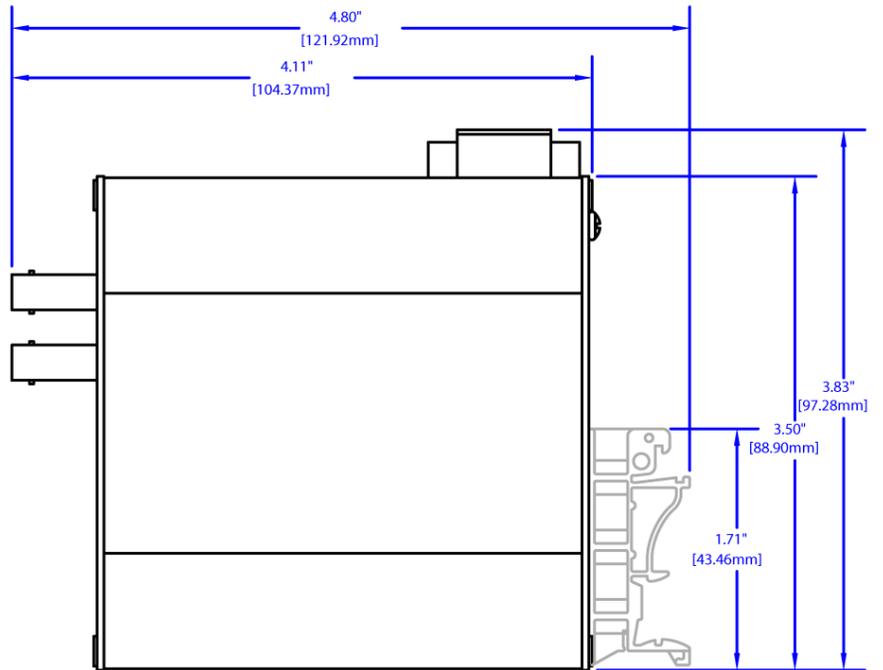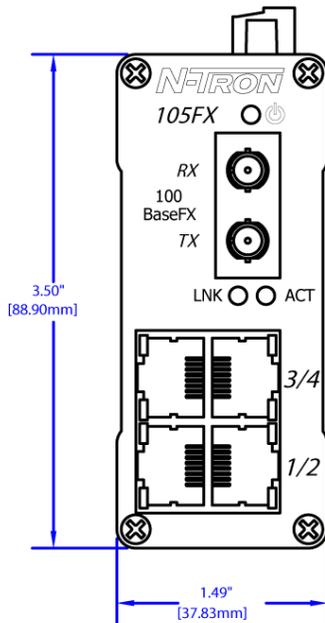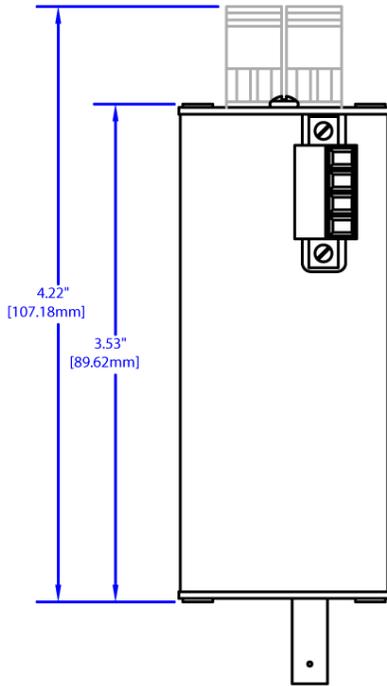**N-TRON Europe GmbH**
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REV 090805

4.22"
[107.18mm]

3.53"
[89.62mm]

4.80"
[121.92mm]

4.11"
[104.37mm]

N-TRON

105FX

RX
100
BaseFX
TX

LNK ◯ ◯ ACT

3/4

1/2

3.50"
[88.90mm]

1.49"
[37.83mm]

3.83"
[97.28mm]

3.50"
[88.90mm]

1.71"
[43.46mm]

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