105FX Industrial Ethernet Switch

N-Tron Networking Series

Unmanaged Industrial Ethernet Switch

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 meet 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 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

SPECIFICATIONS

Case Dimensions

Height:	3.5"	(8.9 cm)
Width:	1.5"	(3.8 cm)
Depth:	3.6"	(9.0 cm)
Weight:	0.6 lbs.	(0.27 kg)
DIN-Rail:	35mm	

Electrical

Input Voltage:	10-30 VDC
Input Current:	270mA@24V
BTU/hr:	22.1@24VDC
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

Connectors

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

Recommended Wiring Clearance

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

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 Title 47 Part 15 Class A, ICES-003 Class A
CE: EN61000-6-2, EN61000-3-2,3; IEC61000-4-2,3,4,5,6,11 EN55011
UL/cUL: Hazardous Locations Class I, Div 2, Groups A, B, C, D or non-Hazardous Locations, ANSI/ISA 12.12.01-2000, T4A
DNV-GL Type Approved and ABS for Shipboard Applications
EN50155 Type Approved

Designed to comply with:

IEEE 1613 for Electric Utility Substations
NEMA TS1/TS2 for TrafficControlEquipment

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*

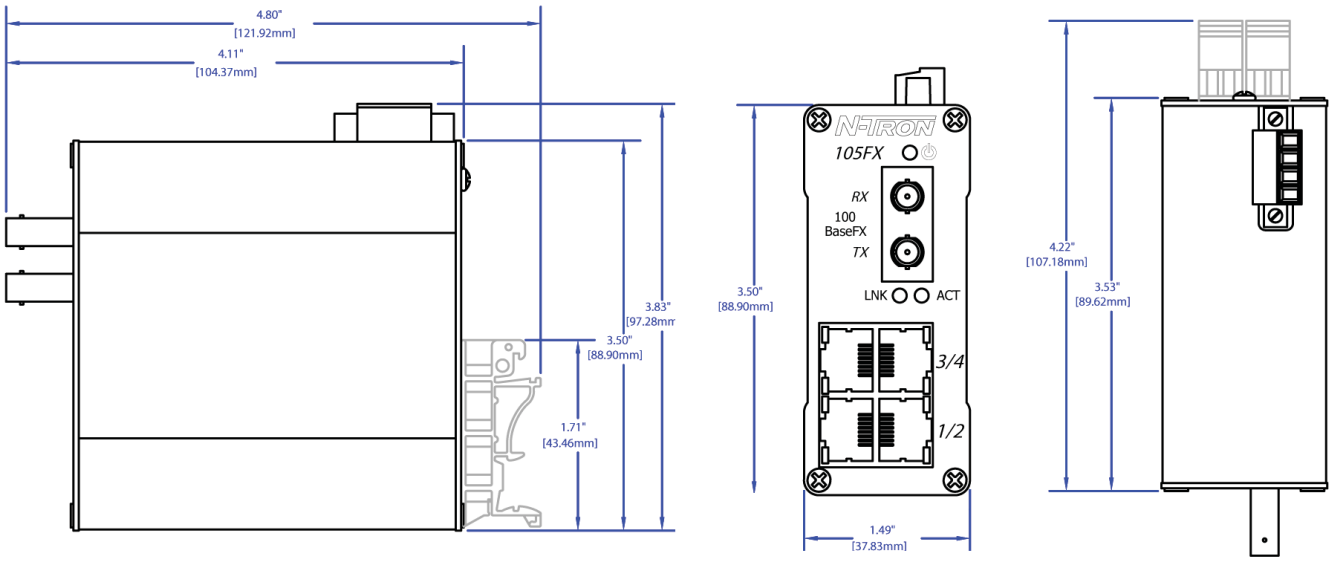
* Multimode Fiber Optic Cable
** Singlemode Fiber Optic Cable

Ordering Information

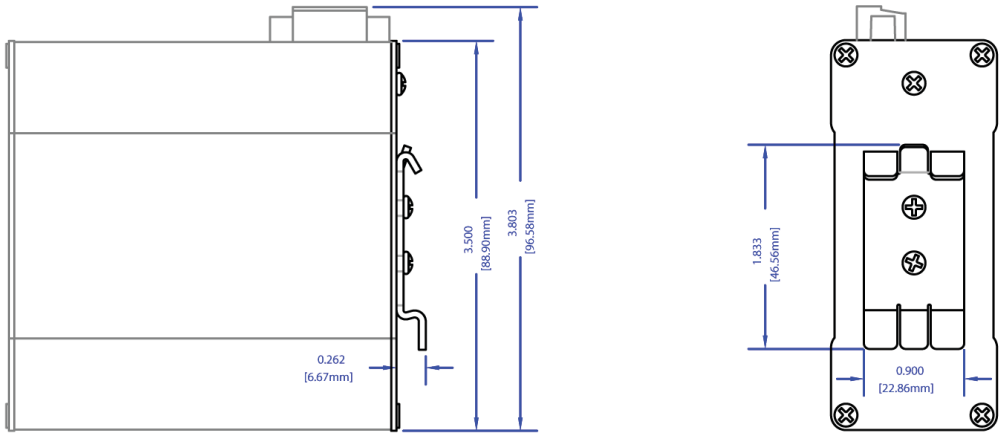
105FX-XX	100BaseFX multimode fiber
105FXE-XX-YY	100BaseFX singlemode fiber
NTPS-24-1.3	DIN-Rail Power Supply 24V@1.3 Amp
100-MDR-2	Metal Din Rail Option*
Where "XX" is:	ST for ST style fiber connector
	SC for SC style fiber connector
Where "YY" is:	15 for 15km max. fiber segment length
	40 for 40km max. fiber segment length
	80 for 80km max. fiber segment length

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

105FX with Standard DIN rail Mount



Optional 100-MDR-2 Metal DIN Rail Mount



red lion®

www.redlion.net

Connect. Monitor. Control.

Americas
sales@redlion.net

Asia-Pacific
asia@redlion.net

Europe
Middle East
Africa
europe@redlion.net

+1 (717) 767-6511

As the global experts in communication, monitoring and control for industrial automation and networking, Red Lion has been delivering innovative solutions for over forty years. Our automation, Ethernet and cellular M2M technology enables companies worldwide to gain real-time data visibility that drives productivity. Product brands include Red Lion, N-Tron and Sixnet. With headquarters in York, Pennsylvania, the company has offices across the Americas, Asia-Pacific and Europe. Red Lion is part of Spectris plc, the productivity-enhancing instrumentation and controls company. For more information, please visit www.redlion.net.

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