106FX2 Industrial Ethernet Switch

N-Tron Networking Series

▶▶▶ Unmanaged Industrial Ethernet Switch

The N-TRON® 106FX2 is a low cost, unmanaged six 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
- Unmanaged Operation
- Full IEEE 802.3 Compliance
- Four 10/100BaseTX RJ-45 Ports
- Two 100BaseFX Ports 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 1.2 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 106FX2 Industrial Network Switch is designed to solve the most demanding industrial communications requirements while providing high throughput and minimum downtime.

The 106FX2 provides four RJ-45 auto sensing 10/100BaseTX ports, plus two fiber based Fast Ethernet uplink ports. All TX ports are full/half duplex capable, using leading-edge Ethernet switching technology. The 106FX2 auto-negotiates the speed and flow control capabilities of the four TX port connections, and configures itself automatically. The two fiber ports are 100BaseFX fiber optic uplinks utilizing industry standard ST or SC duplex connectors.

Since the TX ports of the 106FX2 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 N-TRON 106FX2 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 a unmanaged hub. The 106FX2 can simplify plant wiring by eliminating the need to bring data acquisition and control network connections back to a climate controlled environment.

The 106FX2 has extended operating environmental specifications to meet the harsh needs of the industrial environment. For cost savings and convenience the 106FX2 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 106FX2 contains redundant power inputs. LEDs are provided to display the link status and activity of each port, as well as power on/off status.

▶▶▶ 106FX2 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:	27@24VDC
Inrush:	7.9Amp/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)

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

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 >2 Million 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 Type Approved and ABS for Shipboard Applications

Designed to comply with:

IEEE 1613 for Electric Utility Substations

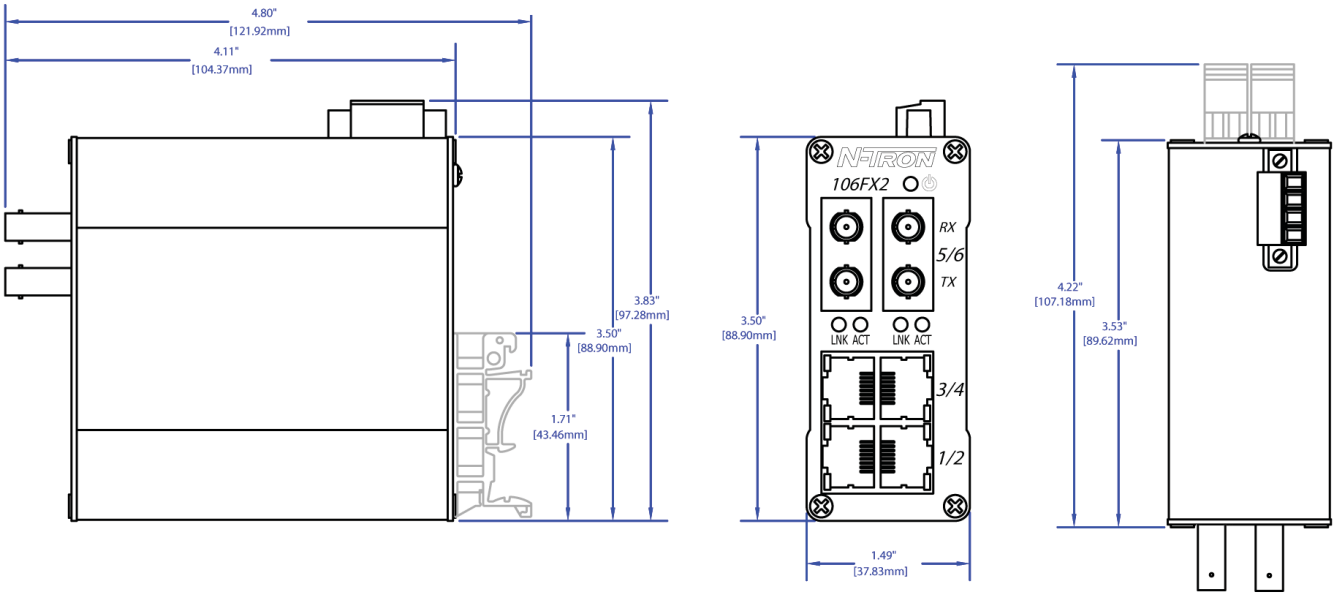
NEMA TS1/TS2 for Traffic Control Equipment

Ordering Information

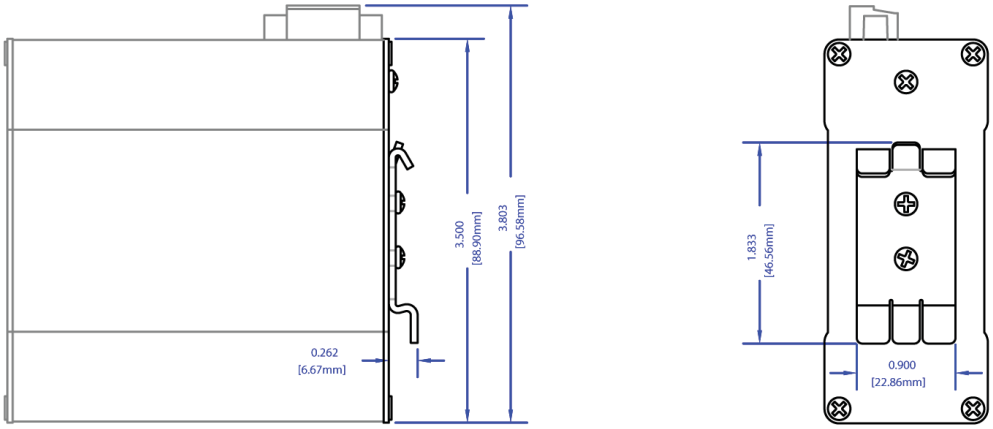
106FX2-XX	100BaseFX multimode fiber
106FXE2-XX-YY	100BaseFX singlemode fiber
NTPS-24-1.3	DIN-Rail Power Supply 24V@1.3 Amp
100-MDR-2	Metal Din Rail Option - Tall Enclosures
Where "XX" is:	ST for ST style fiber connector, SC for SC style fiber connector
Where "YY" is:	15 for 15km max. fiber segment length
	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

106FX2 with Standard DIN rail Mount



Optional 100-MDR-2 Metal DIN Rail Mount



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