N-TRON
THE INDUSTRIAL NETWORK COMPANY
1003GX2

The *N-TRON® 1003GX2* is an unmanaged three port Gigabit 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, 802.3u, 802.3z, and 802.3ab Compliance
- One 10/100/1000BaseT RJ-45 Port
- Two 1000BaseSX/LX SFP (Mini-GBIC) Ports
- Mix-and-Match Multimode and Singlemode LC Style SFP Gigabit Fiber Transceivers
- Extended Environmental Specifications
  - -40ºC to 85ºC Operating Temperature
  - >2M Hours MTBF
- RJ-45 Port Supports Full/Half Duplex Operation
- Up to 6.0 Gb/s Maximum Throughput
- Supports up to 1,024 MAC Addresses
- Store-and-forward Technology
- RJ-45 Port Auto Senses Speed and Flow Control
- Full Wire Speed Communications
- MDIX Auto Cable Sensing (RJ-45)
- Hardened Metal DIN-Rail Enclosure
- LED Link/Activity Status Indication
- Redundant Power Inputs (10-30 VDC)

PRODUCT OVERVIEW

The *1003GX2* Gigabit Industrial Ethernet Switch is designed to solve the most demanding industrial communications requirements while providing high throughput and minimum downtime.

The *1003GX2* provides one RJ-45 auto sensing 10/100/1000BaseT port and two 1000BaseSX/LX SFP ports. The RJ-45 port is full/half duplex capable, using "state of the art" Ethernet switching technology.

The *1003GX2* auto-negotiates the speed and flow control capabilities of the copper port connection, and configures itself automatically. Each 1000BaseSX/LX fiber optic port utilizes industry standard SFP transceivers with LC style connectors and is configured for full duplex operation. Both multimode and singlemode fiber models are available.

Since the TX port of the *1003GX2* is auto sensing, there will be no need to make extensive wiring changes if upgrades are made to 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 *1003GX2* supports up to 1,024 MAC addresses, thus enabling these products to support extremely sophisticated and complex network architectures.

The *N-TRON 1003GX2* 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 *1003GX2* is engineered to withstand the extremes of industrial environments and carries an impressive operating temperature rating of -40ºC to 85ºC. For cost savings and convenience the media converter 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. In addition, as with other DIN-Rail devices, the *1003GX2* can be panel mounted by using our *1000-PM* kit.

To increase reliability, the *1003GX2* contains redundant power inputs. LEDs are provided to display the link status and activity of each port, as well as power on/off status.

1003GX2 SPECIFICATIONS

Case Dimensions

Height:	4.3"	(11.0 cm)
Width:	1.0"	(2.6 cm)
Depth:	3.7	(9.4 cm)
Weight:	0.76 lbs.	(0.22 kg)
DIN-Rail:	35mm	

Electrical

Input Voltage:	10-30 VDC
Input Current:	200mA@24V
Inrush:	13Amp/0.8ms@24V

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
100BaseT:	>Cat5 Cable
1000BaseT:	>Cat5e Cable
1000BaseSX Multimode:	50-62.5/125µm
1000BaseLX Singlemode:	7-10/125µm

Connectors

10/100/1000BaseT:	One (1) RJ-45 TX Port
1000BaseSX/LX SFP:	Two (2) SFP LC Duplex Gigabit Fiber Ports

Recommended Wiring Clearance

Front:	5" (12.70 cm)
Top:	1" (2.54 cm)

SFP Gigabit Fiber Transceiver Characteristics

Fiber Length	550m for 50/125µm 275m for 62.5/125µm*	10km**	40km**	70km**
TX Power Min	-9.5dBm	-9.5dBm	-2dBm	0dBm
RX Sensitivity Max	-17dBm	-20dBm	-22dBm	-23dBm
Wavelength	850nm	1310nm	1310nm	1550nm
Assumed Fiber Loss	3.5 to 3.75 dB/km	.45 dB/km	.35 dB/km	.25 dB/km
Laser Type	VCSEL	FP	DFB	DFB

* SX Fiber Optic Cable
** LX Fiber Optic Cable

Regulatory Approvals

FCC/CE (CFR 47, Part 15, Subpart B, Class A)
EN 61000-6-2/4, IEC 61000-4-2/3/4/5/6
EN 55011, ICES-003
UL/cUL: Class I, Division 2, Groups A, B, C and D; T4A
UL 508, ICE and ANSI/ISA-12.12.01-2007
ABS Type Approval for Shipboard Applications
DNV Type Approval Certification
GOST-R Certified, RoHS Compliant
Designed to comply with:
IEEE 1613 for Electric Utility Substations
NEMA TS1/TS2 for Traffic Control

BENEFITS

Industrial Ethernet Switch
- Compact Size, Small Footprint
- High Reliability/Availability
- Extended Environmental Specifications
- Hardened Metal DIN-Rail Enclosure
- High Performance
- High MTBF >2M Hours (measured)
- ESD Protection Diodes on RJ-45 Ports
- Surge Protection Diodes on Power Inputs

Ease of Use
- Plug & Play Operation
- RJ-45 Auto Sensing 10/100/1000BaseT Port
- RJ-45 Port Auto Senses Duplex, Speed, and Cable Type
- Compact DIN-Rail Package

Increased Performance
- Full Wire Speed Capable
- Two 1000BaseSX/LX Fiber Uplinks
- Full Duplex Capable
- Eliminates Network Collisions
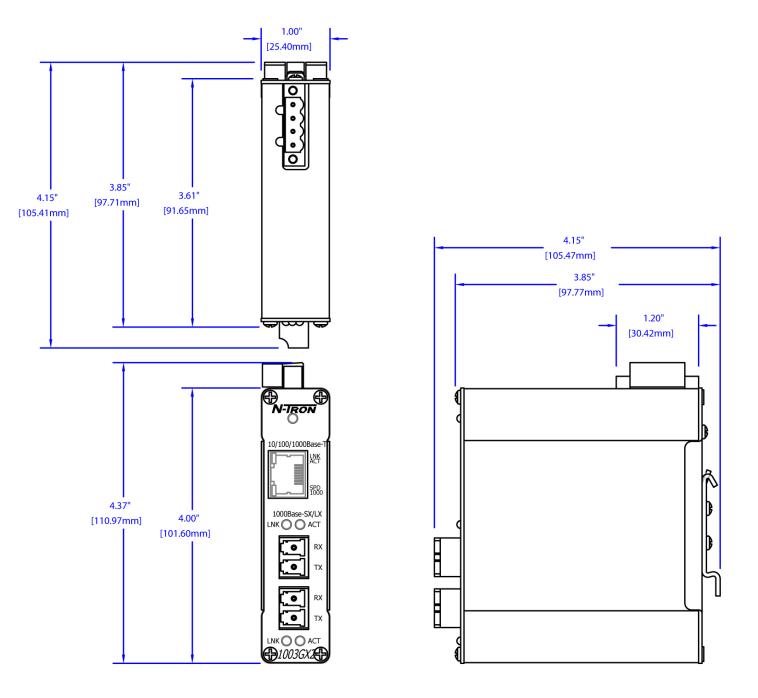- Increases Network Determinism

Ordering Information

1003GX2-B	One 10/100/1000BaseT Port Two 1000BaseSX/LX Ports with mix-and-match SFP Transceivers*
1003GX2-SX	One 10/100/1000BaseT Port Two 1000BaseSX SFP Transceivers
1003GX2-LX-10	One 10/100/1000BaseT Port Two 1000BaseLX-10 SFP Transceivers
1003GX2-LX-40	One 10/100/1000BaseT Port Two 1000BaseLX-40 SFP Transceivers
1003GX2-LX-70	One 10/100/1000BaseT Port Two 1000BaseLX-70 SFP Transceivers
1000-PM	Panel Mount Kit
NTPS-24-1.3	DIN-Rail Power Supply 24V@1.3 Amp
NTSFP-SX	One 1000BaseSX Multimode SFP Gigabit Transceiver (two required per unit)
NTSFP-LX-ZZ	One 1000BaseLX Singlemode SFP Gigabit Transceiver (two required per unit)

ZZ = 10, 40, or 70 for GB Singlemode SFP Transceiver
*Unit must be fully populated with **two** SFP transceivers upon shipment.

Contact Information

1.00"
[25.40mm]

4.15"
[105.41mm]

3.85"
[97.71mm]

3.61"
[91.65mm]

4.15"
[105.47mm]

3.85"
[97.77mm]

1.20"
[30.42mm]

4.37"
[110.97mm]

4.00"
[101.60mm]

N-TRON

10/100/1000Base-T

LNK
ACT

SPD
1000

1000Base-SX/LX
LNK   ACT

RX

TX

RX

TX

LNK   ACT

1003GX2