N-TRON
THE INDUSTRIAL NETWORK COMPANY

1002MC

The *N-TRON® 1002MC* is an unmanaged 10/100/1000BaseT to 1000BaseSX/LX Industrial Media Converter. 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
- Converts 10/100/1000BaseT to 1000BaseSX/LX
- Choose from Multimode or Singlemode LC Style SFP (Mini-GBIC) Gigabit Fiber Transceivers
- Extended Environmental Specifications
  - -40ºC to 85ºC Operating Temperature
  - >2M Hours MTBF
- RJ-45 Port Supports Full/Half Duplex Operation
- Up to 2.0 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 *1002MC* IndustrialMedia Converter is designed to allow the connection of 10/100/1000BaseT Ethernet devices to your 1000BaseSX/LX fiber cabling infrastructure.

The *1002MC* provides one RJ-45 auto sensing 10/100/1000BaseT port and one 1000BaseSX/LX SFP port. The RJ-45 port is full/half duplex capable, using "state of the art" Ethernet switching technology. The *1002MC* auto-negotiates the speed and flow control capabilities of the copper port, and configures itself automatically. The 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 *1002MC* uses switching technology, unlike most media converters, 10Mbps devices can be connected today and upgraded to 1000Mbps tomorrow. The switching fabric simply scales up or down automatically to match your specific network environment.

The *1002MC* supports up to 1,024 MAC addresses, providing support for extremely sophisticated and complex network architectures.

The *N-TRON 1002MC* is well suited to convert 10/100/1000 BaseT industrial devices to fiber, allowing you to take advantage of your fiber based infrastructure and it's inherent advantages. Compared to copper based systems, fiber provides increased noise immunity and longer cable lengths.

The *1002MC* 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 *1002MC* can be panel mounted by using our *1000-PM* kit.

To increase reliability, the *1002MC* contains redundant power inputs. LEDs are provided to display the link status and activity of each port, as well as powern on/off status.

1002MC SPECIFICATIONS

Case Dimensions

Height:	4.3"	(11.0 cm)
Width:	1.0"	(2.6 cm)
Depth:	3.7	(9.4 cm)
Weight:	0.60 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.

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

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:	One (1) SFP LC Duplex Gigabit Fiber Port

Recommended Wiring Clearance

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

Ordering Information

1002MC-SX	1000BaseSX multimode fiber
1002MC-LX-ZZ	1000BaseLX singlemode fiber
1000-PM	Panel Mount Kit
NTPS-24-1.3	DIN-Rail Power Supply 24V@1.3 Amp

Where "ZZ" is: 10 for 10km max. fiber segment length
40 for 40km max. fiber segment length
70 for 70km max. fiber segment length

BENEFITS

Industrial Media Converter

- Compact Size, Small Footprint
- Converts 10/100/1000BaseT to 1000BaseSX/LX
- 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
- 1000BaseSX/LX Fiber Uplink
- Full Duplex Capable
- Eliminates Network Collisions
- Increases Network Determinism

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

Contact Information

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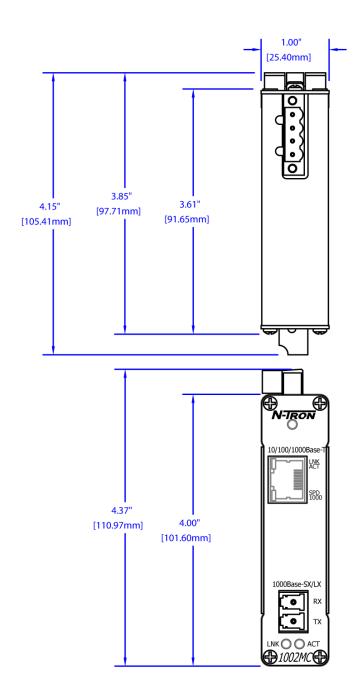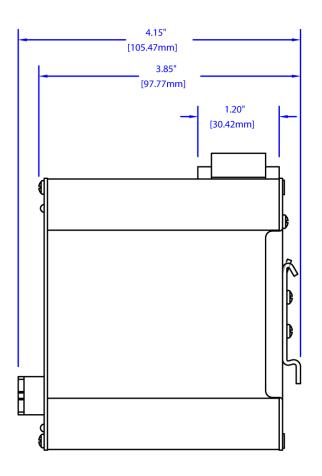MANUFACTURING COMPANY

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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]

N-TRON

10/100/1000Base-T

LNK
ACT

SPD
1000

1000Base-SX/LX

RX

TX

LNK ○ ○ ACT

1002MC

4.37"
[110.97mm]

4.00"
[101.60mm]