105M12 Industrial Ethernet Switch

N-Tron Networking Series

IP67 Rated Unmanaged Industrial Ethernet Switch

The N-Tron® 105M12 is an IP67-rated, unmanaged Industrial Ethernet Switch. It is housed in a hardened, metal, bulkhead mountable enclosure rated for protection against dust, low/high pressure water jets, and temporary immersion in water. This switch offers five 10/100BaseTX ports with M12 D-coded connectors and is designed for use in mission critical data acquisition, control, and Ethernet I/O applications.

PRODUCT FEATURES

- Unmanaged Operation
- IP67 Rated Hardened Metal Enclosure
- Bulkhead Mountable (Optional DIN-Rail mounting)
- Dustproof
- Protection against low/high pressure water jets
- Temporary immersion in water
- American Bureau of Shipping (ABS) Type Approval
- EN50155 for Railway applications
- Five 10/100BaseTX Ports
- M12 D-Coded Female 4 Pin Connectors
- Extended Environmental Specifications
  - -40ºC to 80ºC Operating Temperature
  - >2M Hours MTBF
- Store-and-forward Technology
- Supports Full/Half Duplex Operation
- Up to 1.0 Gb/s Maximum Throughput
- MDIX Auto Sensing Cable
- Auto Sensing Speed and Flow Control
- Full Wire Speed Communications
- Redundant Power Inputs (10-30 VDC)
- ESD Protection Diodes on all Ports
- Surge Protection Diodes on Power Inputs
- LED Link/Activity Status Indication

PRODUCT OVERVIEW

The 105M12 Industrial IP67 Rated Ethernet Switch is designed to meet the most demanding industrial communications requirements while providing high throughput and minimum downtime.

The 105M12 provides five auto sensing 10/100BaseTX ports with M12, D-coded, 4 pin, female, style connectors. All ports are full/half duplex capable, using "state of the art" Ethernet switching technology. The 105M12 auto-negotiates the speed and flow control capabilities of the five TX port connections, and configures itself automatically.

Since the 105M12 is 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 105M12 supports up to 2,000 MAC addresses, enabling these products to support extremely sophisticated and complex network architectures.

For applications requiring IP67 protection, the N-Tron 105M12 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 105M12 can simplify plant wiring by eliminating the need to bring data acquisition and control network connections back to a climate controlled environment. The 105M12 has extended operating environmental specifications to meet the harsh needs of the industrial environment. For cost savings and convenience this network switch can be bulkhead or DIN-Rail mounted alongside other waterproof Industrial Equipment.

To increase reliability the 105M12 provides 10-30 VDC dual redundant power inputs. LEDs are provided to display the link status and activity of each port.

105M12 SPECIFICATIONS

Case Dimensions

Height:	5.0"	(12.7 cm)
Width:	4.4"	(11.0 cm)
Depth:	1.8"	(4.6 cm)
Weight:	1.8 lbs.	(0.816 kg)

Electrical

Input Voltage:	10-30 VDC
Steady Input Current:	215mA@24V
Inrush:	7.8Amp/0.7ms@24V

Environmental

Operating Temperature:	-40°C to 80°C
Storage Temperature:	-40°C to 85°C
Operating Humidity:	5% to 100% (Non Condensing)
Operating Altitude:	0 to 10,000 ft.

Reliability

MTBF:	>2 Million Hours

Network Media

10BaseT:	>Cat3 Cable
100BaseTX:	>Cat5 Cable

Connectors

10/100BaseTX:	Five (5) M12 D-Coded 4 Pin Female Ports
Power:	One (1) M12 A-Coded 5 Pin Male Port

Recommended Wiring Clearance

Front:	~4" (10.16 cm)

BENEFITS

Industrial Network Switch

- IP65, IP66, and IP67 Protection
- Hardened Metal Bulkhead Mountable Enclosure (Optional DIN-Rail mount avaiable)
- Extended Environmental Specifications
- High Performance
- High MTBF >2 Million Hours
- ESD Protection Diodes on all Ports
- Surge Protection Diodes on Power Inputs

Ease of Use

- Plug & Play Operation
- Auto Sensing 10/100BaseTX
- Auto Sensing Full/Half Duplex
- MDIX Auto Cable Sensing
- Unmanaged Operation

Increased Performance

- Full Wire Speed Capable
- Full Duplex Capable
- Eliminates Network Collisions
- Increases Network Determinism

Regulatory Approvals

FCC Title 47 Part 15 Class A, ICES-003-Class A
UL Listed (US and Canada) per ANSI/ISA-12.12.01-2007 Class I, Div 2, Groups A,B,C,D,T4A
CE: EN61000-6-2,4; EN61000-4-2,3,4,5,6; EN55011
GOST-R Certified
ABS Type Approval for Shipboard Applications
DNV-GL Type Approval Certification
EN50155 for Railway Applications
RoHS Compliant

Designed to comply with:

IEEE 1613 for Electric Utility Substations
NEMA TS1/TS2 for Traffic Control Equipment

Ordering Information

105M12	Five 10/100BaseTX Ports with M12 D-Coded Style Connectors
CAT5E-M12-M12-X	Cat5E STP Cable with Straight M12 to Straight M12 Connector, Shielded
CAT5E-M12-RJ45-X	Cat5E STP Cable with Straight M12 to RJ-45 Connector, Shielded
CAT5E-M12-X	Cat5E STP Cable with Straight M12 Connector to bare end, Shielded
CAT5E-RM12-M12-X	Cat5E STP Cable with 90º M12 to Straight M12 Connector, Shielded
CAT5E-RM12-RM12-X	Cat5E STP Cable with 90º M12 to 90º M12 Connector, Shielded
CAT5E-RM12-RJ45-X	Cat5E STP Cable with 90º M12 to RJ-45 Connector, Shielded
CAT5E-RM12-X	Cat5E STP Cable with 90º M12 to bare end, Shielded
NTPS-24-1.3	DIN-Rail Power Supply 24V@1.3 Amp
PWR-M12-A-X	Power Cable, M12 A-Coded Straight Female Connector to bare end, Shielded
PWR-RM12-A-X	Power Cable, M12 A-Coded 90º Female Connector to bare end, Shielded
M12DRC-ISO	DIN-Rail kit, two isolated plastic clips
M12DRC-MTL	DIN-Rail kit, two metal clips

Where:
X = length of cable, fill in desired amount in feet.
Example: CAT5E-RM12-10 (for a 10ft cable)