708M12-HV Industrial Ethernet Switch

N-Tron® Networking Series

red lion®

►►► Managed Industrial Ethernet Switch

The N-TRON® 708M12-HV Industrial Ethernet Switch offers outstanding performance and ease of use. It is a fully managed switch, ideally suited for connecting Ethernet-enabled devices in railway, industrial and security applications.

PRODUCT FEATURES:

- IP67-Rated Hardened Metal Enclosure
- Bulkhead Mountable (Optional DIN-Rail mounting)
- Dustproof
- Protection against low/high pressure water jets
- Temporary immersion in water
- Eight 10/100BaseTX M12 D-Coded Ports
- -40ºC to 80ºC Operating temperature
- ESD and Surge Protection Diodes on all Ports
- Auto Sensing 10/100BaseTX, Duplex, and MDIX
- Store-and-Forward Technology
- Redundant Power Inputs (40-160 VDC)
- Configurable Bi-Color Fault Status LED

Fully Managed Features:

- Full SNMP and Web Browser Management
- Detailed Ring Map and Fault Location Charting
- N-Ring™ Technology with ~30ms Healing
- N-View™ OPC Monitoring
- N-Link Redundant N-Ring Coupling
- Plug-and-Play IGMP Support
- 802.1Q tag VLAN and Port VLAN
- 802.1p QoS and Port QoS
- EtherNet/IP™ CIP Messaging
- LLDP (Link Layer Discovery Protocol)
- Trunking
- Port Mirroring
- 802.1d, 802.1w, 802.1D RSTP
- DHCP Server, Option 82 relay, Option 61, IP Fallback
- Port Security—MAC Address Based
- Optional N-TRON Auto Configuration Device for saving and restoring configuration.(P/N700-NTCD-M12)

Management Features

The 708M12-HV offers several management functions that can be easily configured using a web browser.

IGMP Snooping - Internet Group Management Protocol allows the switch to forward and filter multicast traffic intelligently.

VLAN - Virtual Local Area Network allows you to segment the switch in order to create two or more separate local area network domains.

QoS - Quality of Service provides prioritization of network traffic in order to provide better network service. QoS improves the latency of prioritized Ethernet packets required for ring management, real-time, and other interactive applications.

Trunking - Trunking (link aggregation) enables multiple physical ports to be linked together and function as one uplink to another N-TRON trunking capable switch configured in the same manner, thereby increasing the bandwidth between switches. This configuration can provide increased bandwidth and redundancy to applications requiring high levels of fault tolerant operation.

Port Mirroring - Allows the traffic on one port to be duplicated and sent to a designated mirror port. Port mirroring is used to monitor Ethernet traffic on the designated source port using the assigned mirror port.

DHCP - DHCP Server/Client automates the assignment of IP addresses. DHCP Option 82 assures that if a device on a specific port is replaced, the replacement receives the same IP address as the original device.

Rapid Spanning Tree - This function allows the switch to be configured in a Ring or Mesh topology, and provides support for redundant path communications with high-speed (rapid) healing.

Remote Monitoring Options

For ease of configuration and monitoring, the 708M12-HV offers Web Browser Management and N-View™ OLE for Process Control (OPC) Server Software. The N-TRON N-View Software can be combined with popular HMI software packages to add network traffic monitoring, trending, and alarming to any application using N-TRON switches. In addition SNMP is available for switch link and status monitoring. The 708M12-HV Switch Status LED can be configured to respond to power failure on power input 1 or input 2, N-Ring Broken, Partial Break High, Partial break Low, or if multiple Ring managers are detected.

N-Ring™ Technology

N-TRON's N-Ring technology offers expanded ring size capacity, detailed fault diagnostics, and a standard healing time of ~30ms. The 708M12-HV Ring Manager periodically checks the health of the Ring via packets. If the Ring Manager stops receiving these health check packets, it converts the Ring to a linear bus topology within ~30ms. In addition to standard Ring Manager protocol, when using all N-TRON fully managed switches in the ring, a detailed ring map and fault location chart will also be provided on the Ring Manager's web browser and OPC Server to identify the health status of the ring. Up to 250 fully managed N-TRON switches can participate in N-Ring topologies.

Industrial Packaging and Specifications

The 708M12-HV is specifically designed to operate in industrial environments. The rugged IP67 enclosure combined with extended industrial specifications and features to meet or exceed the operating parameters of the connected equipment. These include extended temperature ratings, extended shock and vibrations specs, redundant power inputs, and high MTBF (greater than 2M hours).

Ease of Use

The 10/100BaseTX ports are auto sensing and auto configuring. Each copper port is automatically negotiated for maximum speed and performance by default, but can also be hard coded using the web browser. A high-speed processor allows wire speed capability on all 100BaseTX ports simultaneously.

industrial networking

708M12-HV Specifications

Switch Properties

Number of MAC Addresses:	8000
Aging Time:	Programmable
Latency Typical:	2.9 µs
Switching Method:	Store-and-Forward

Case Dimensions

Height:	6.7"	(16.9cm)
Width:	6.7"	(16.9cm)
Depth (incl. DIN rail mount):	1.8"	(4.6cm)
Weight (max):	3.4 lbs	(1.6kg)
DIN-Rail Mount:	35mm	(with optional clips)

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.

Electrical

Redundant Input Voltage:	40-160 VDC
Input Current (max):	62mA max @ 124 VDC
BTU/hr:	26.4 @ 124 VDC
N-TRON Power Supply:	NTPS-48-2

Shock and Vibration (bulkhead mounted)

Shock:	200g @ 10ms
Vibration/Seismic:	50g, 5-200Hz, Triaxial

Reliability

MTBF:	>2 Million Hours

Network Media

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

Connectors

10/100BaseTX:	Eight (8) M12 D-Coded 4 Pin Female Ports
RS-232 Com	One (1) M12 A-Coded 5 Pin Female Port
NTCD-M12	One (1) M12 A-Coded 5 Pin Female Port

Recommended Wiring Clearance

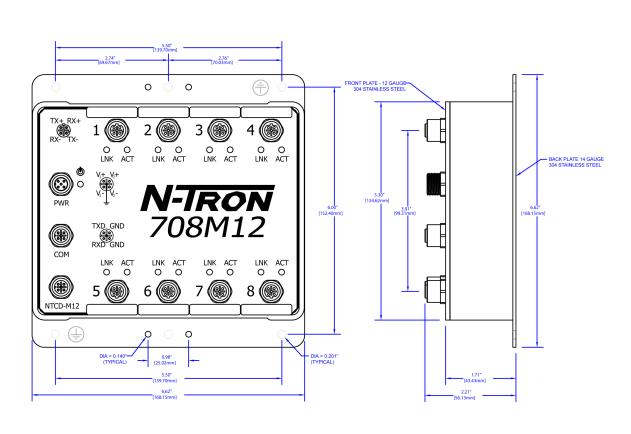|	
Front:	~4" (10.16cm)

Regulatory Approvals

FCC CFR 47 Part 15, Subpart B, Class A
EN55022, ICES-003
EN 61000-4-3/4/5/6
EN50155 for Railway Applications
TUV/GS/CE: EN60950-1

EtherNet/IP

708M12-HV Industrial Ethernet Switch
Ordering Information

708M12-HV   IP67-rated Ethernet Switch; Eight 10/100BaseTX ports with M12 D-Coded connectors, 40-160VDC

700-NTCD-M12   Configuration device for saving and restoring configuration parameters

NTPS-48-2   DIN-Rail power supply 2A @ 48V

Cat5E STP Cables with M12 connectors

CAT5E-M12-M12-X	Straight M12 to Str. M12, Shielded
CAT5E-M12-RJ45-X	Straight M12 to RJ-45, Shielded
CAT5E-M12-X	Straight M12 to bare end, Shielded
CAT5E-RM12-M12-X	90º M12 to Str. M12, Shielded
CAT5E-RM12-RM12-X	90º M12 to 90º M12, Shielded
CAT5E-RM12-RJ45-X	90º M12 to RJ-45, Shielded
CAT5E-RM12-X	90º M12 to bare end, Shielded
PWR-M12-A-X	Power Cable, M12 A-Coded Straight Female to bare end, Shielded
PWR-RM12-A-X	Power Cable, M12 A-Coded 90º Female to bare end, Shielded
SERIAL-DB9-M12	Serial cable, DB-9 to M12: 5 ft, Shielded
SERIAL-DB9-RM12	Serial cable, DB-9 to 90º M12, 5 ft, Shielded

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

red lion®

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.