

## PRODUCT FEATURES

- Eight 10/100BaseTX RJ-45 Ports
- One 100BaseFX Port, ST or SC Style
- -40°C to 70°C Operating temperature
- Onboard Temperature Sensor
- ESD and Surge Protection Diodes on all Ports
- Auto Sensing 10/100BaseTX, Duplex, and MDIX
- Store-and-forward Technology
- Rugged DIN-Rail Enclosure
- Redundant Power Inputs (10-49VDC)
- Configurable Bi-Color Fault Status LED

## FULLY MANAGED FEATURES:

- SNMP v1, v2, v3 and Web Browser Management
- Configuration backup via Optional SD card (NTCD)
- Detailed Ring Map and Fault Location Charting
- N-Ring™ Technology with ~30ms Healing
- N-View™ OPC Monitoring
- N-Link™ Redundant N-Ring Coupling
- IGMP Auto configuration
- 802.1Q tag VLAN and Port VLAN
- 802.1p QoS, Port QoS, and DSCP
- EtherNet/IP™ CIP Messaging
- LLDP (Link Layer Discovery Protocol)
- Port Trunking
- Port Mirroring
- 802.1d, 802.1w, 802.1D RSTP
- DHCP Server, Option 82 relay, Option 61
- Local Port IP Addressing



The N-TRON® 709FX compact, fully managed industrial Ethernet switch is housed in a rugged industrial metal enclosure and offers a powerful combination of eight 10/100BaseTX copper ports and one 100Base fiber port. It is ideally suited for use in industrial and utility applications such as factory floor control networks, electric power substations, wind turbines, wastewater treatment facilities, intelligent traffic control and transportation applications, and any other application where high reliability, superior noise immunity, extreme ruggedness, and extended distance are required.

**Remote Monitoring Options** - Web browser and N-View OPC (OLE for process control) server software provides configuration and monitoring capability. N-View software easily combines with HMI software to monitor network traffic, alarms, and trends. SNMP is also available for switch link and status monitoring. Status LEDs are configurable to indicate power failure and N-RING status.

**N-Ring Technology** - N-Ring technology provides expanded ring capacity, detailed fault diagnostics, and fast 30ms healing time. The ring manager validates the integrity of the ring using health check packets and quickly converts the ring to a linear topology within ~30ms when an error is detected. The health status of a ring comprised of all N-Tron fully managed switches may be monitored. A detailed ring map and fault location chart may be accessed by the ring manager's web browser or the OPC server. N-Link™ allows the linking of two N-Rings. Up to 250 fully managed N-TRON switches are supported in an N-Ring topology.

**Industrial Specifications** - High MTBF, extended shock and vibration specifications, wide operating temperature range and redundant power inputs are standard features.

**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 through the user interface. A high speed processor allows wire speed capability on all 10/100BaseTX ports simultaneously.

## 709FX Industrial Ethernet Switch Ordering Information

709FX-XX	Eight 10/100BaseTX Ports, One Multimode 100BaseFX Port, ST or SC Style
709FXE-XX-YY	Eight 10/100BaseTX Ports, One Singlemode 100BaseFX Port, ST or SC Style
NTCD128	Optional configuration card for backup / restore
NTPS-24-1.3	N-TRON Power Supply - (1.3 Amp @ 24VDC)
CPMA-1	Compact panel mount (factory installed option only)
URMK	Universal Rack Mount Kit
Where:	XX = ST or SC YY = 15, 40, or 80 for Singlemode, Blank for Multimode E = Singlemode, and Blank Otherwise

## 709FX Specifications

### Switch Properties

Number of MAC Addresses:	8000
Aging Time:	Programmable
Latency Typical:	2.6 $\mu$ s
Switching Method:	Store-and-Forward

### Case Dimensions

Height:	4.3"	(10.8 cm)
Width:	2.4"	(6.1 cm)
Depth:	4.6"	(11.5 cm)
Weight (max):	1.4lbs	(0.63 kg)
DIN-Rail Mount:	35mm	

### Electrical

Redundant Input Voltage:	10-49 VDC (Regulated)
Input Current (max):	460mA max. @24VDC
N-TRON Power Supply:	NTPS-24-1.3 (1.3A@24V)

### Environmental

Operating Temperature:	-40°C to 70°C
Storage Temperature:	-40°C to 85°C
Operating Humidity:	5% to 95% (Non Condensing)
Operating Altitude:	0 to 10,000 ft.

### Shock and Vibration (bulkhead mounted)

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

### Reliability

MTBF:	>2 Million Hours
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### Network Media

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

### 100 Mb Fiber Transceiver Characteristics

Fiber Length	2km*	15km**	40km**	80km**
TX Power Min	-19dBm/-14dBm	-15dBm/-7dBm	-5dBm/0dBm	-5dBm/0dBm
RX Sensitivity Max	-32dBm	-34dBm	-34dBm	-34dBm
Wavelength	1310nm	1310nm	1310nm	1550nm

\* Multimode Fiber Optic Cable  
\*\* Singlemode Fiber Optic Cable

### Connectors

10/100BaseTX:	Eight (8) RJ-45 Copper Ports
100BaseFX:	One 100BaseFX Port, ST or SC Style

### Recommended Wiring Clearance

Front:	4"	(10.2 cm)
Side:	1"	(2.6 cm)

### Regulatory Approvals

FCC: Title 47, Part 15, Subpart B, Class A; ICES-003: Class A; ANSI C63.4

CE: EN 61000-6-2, 4; IEC 61000-4-2, 3, 4, 5, 6, 8, 11

GOST-R Certified, RoHS Compliant

CURRENTLY IN STANDARDS TESTING FOR:

UL/cUL: Hazardous Locations Class I, Div2, Groups A, B, C, D, T4A

Non-hazardous Locations NASI/ISA 12.12.01-2007

Designed to comply with:

IEEE 1613 for Electric Utility Substations

NEMA TS1/ TS2 for Traffic control

IEC-61850

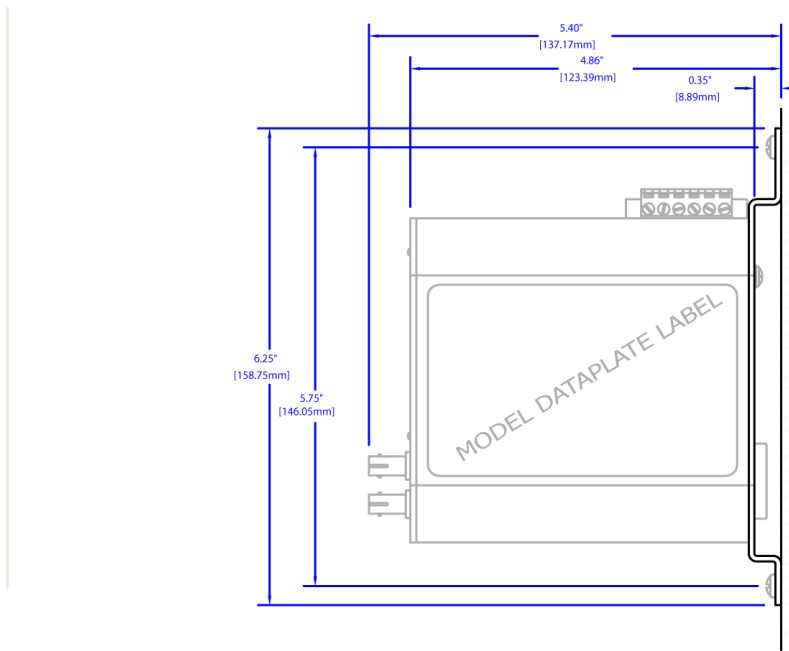
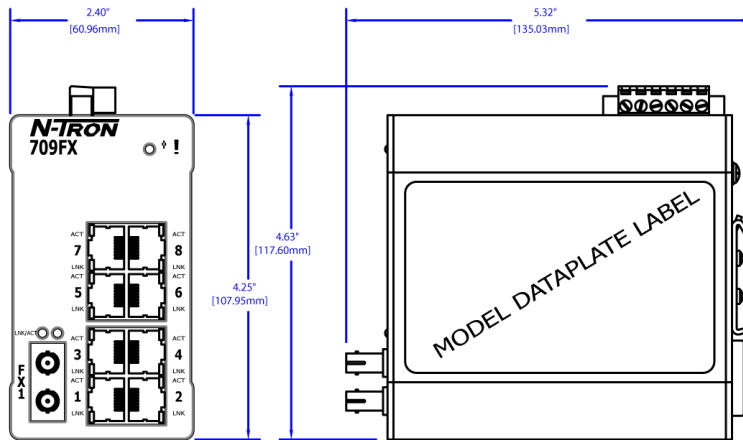
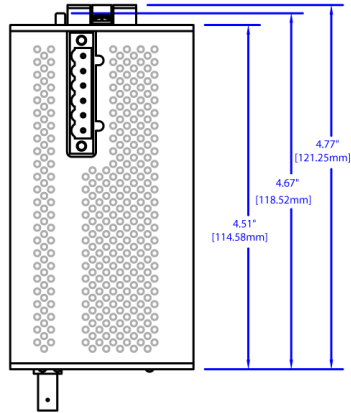
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REV 100208



OPTIONAL COMPACT PANEL MOUNT ASSY.  
( P/N: CPMA-1 )