

The N-TRON® 714FX6 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 six 100Base fiber ports. It is ideally suited for use in industrial applications such as factory floor control networks, utilities, wind turbines, wastewater treatment facilities, rail car, intelligent traffic control and transportation applications, and any other application where high reliability, superior noise immunity, extreme ruggedness, and extended distance are required.

#### PRODUCT FEATURES

- · Eight 10/100BaseTX RJ-45 Ports
- · Six 100BaseFX Ports, 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 (10-49 VDC)
- · Configurable Bi-Color Fault Status LED

#### **FULLY MANAGED FEATURES**

- SNMP v1, v2, v3 and Web Browser Management
- · Configuration backup via Optional SD card
- · Detailed Ring Map and Fault Location Charting
- N-Ring<sup>™</sup> Technology with ~30ms Healing
- N-Link™ Redundant N-Ring Coupling
- RSTP 802.1d, 802.1w, 802.1D
- N-View<sup>™</sup> OPC Monitoring
- 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)
- Trunking
- · Port Mirroring
- · DHCP Server, Option 82 relay, Option 61
- Local Port IP Addressing

# 714FX6



## 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.

# **Specifications**

**Switch Properties** 

Number of MAC Addresses: 8000

Aging Time: Programmable Latency Typical: 2.6 µs

Switching Method: Store-and-Forward

**Case Dimensions** 

 Height:
 4.3" (10.8 cm)

 Width:
 3.1" (7.9 cm)

 Depth:
 4.6" (11.5 cm)

 Weight (max):
 1.8 lbs (0.8 kg)

DIN-Rail Mount: 35mm

Electrical

Redundant Input Voltage: 10-49 VDC (Regulated)
Input Current (max): 610mA max.@24 VDC

BTU/hr: 49.96@24 VDC

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

**Network Media** 

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

Connectors

10/100BaseTX: Eight (8) RJ-45 Copper Ports
100BaseFX: Six (6) SC or ST Fiber Duplex Ports

Recommended Wiring Clearance

Front: 4" (10.16 cm) Side: 1" (2.54 cm)

### **Fiber Transceiver Characteristics**

Fiber Length	2km*	15km**	40km**	80km**
TX Power Min	-19dBm	-15dBm	-5dBm	-5dBm
RX Sensitivity Max	-31dBm	-31dBm	-34dBm	-34dBm
Wavelength	1310nm	1310nm	1310nm	1550nm

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

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

UL/cUL: UL 508 and ANSI/ISA-12.12.01-2007

Class I, Div 2, Groups A, B, C, and D

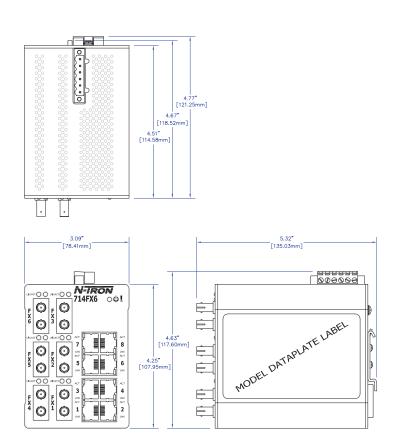
Hazardous and Non-Hazardous Locations, Temp. Code T4A

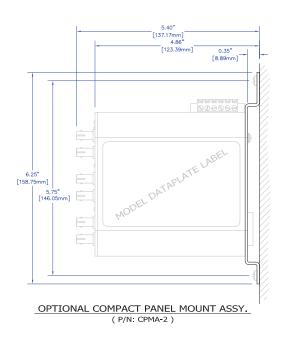
Designed to comply with:

IEEE 1613 for Electric Utility Substations NEMA TS1/ TS2 for Traffic control

IEC-61850







#### ORDERING INFORMATION

PART NUMBER	DESCRIPTION
714FX6-XX	14-port (8 10/100BaseTX, 6 100BaseFX Fiber Ports, Fully Managed Industrial Ethernet Switch, DIN-Rail
14FXE6-XX-YY	14-port (8 10/100BaseTX, 6 100BaseFX Fiber Ports, Fully Managed Industrial Ethernet Switch, singlemode, DIN-Rail
NTCD128	Optional configuration card for backup / restore
NTPS-24-1.3	N-TRON Power Supply - (1.3 Amp @ 24 VDC)
CPMA-2	Compact panel mount (factory installed option only)
URMK	Universal Rack Mount Kit

Where: N = N-View Firmware Option

E = Singlemode

XX = ST for ST style fiber connector, SC for SC style fiber connector

YY = Segment length:

15 for 15km max. fiber segment length 40 for 40km max. fiber segment length 80 for 80km max. fiber segment length Mixed fiber configurations available.

N-TRON USA & Corporate Headquarters 820 S. University Blvd • Suite 4E Mobile, AL 36609 • USA Phone +1-251-342-2164 +1-251-342-6353

www.n-tron.com

Fax

N-TRON ASIA PACIFIC

**CHINA** 

+86 (0) 21-6113-3688 Phone

Fax +86 (0) 21-6113-3683

**INDIA** Phone

+91-9844-876540

**SINGAPORE** 

Phone +65-8118-6821 N-TRON EMEA

Phone +41-41-740-6636 +41-41-740-6637

N-TRON UK/IRELAND/NORDIC/BENELUX

Phone +44 (0) 1928-577257

# please visit us worldwide at www.n-tron.com

® 2011 N-TRON Corporation. N-Tron and the N-Tron logo are trademarks of N-TRON, Corporation. Product names mentioned herein are for identification purposes only and may be trademarks and/or registered trademarks of their respective company. The responsibility for the use and application of N-Tron products rests with the end user. N-Tron makes no warranties as to the fitness or suitability of any N-Tron product for any specific application. N-Tron Corporation shall not be liable for any damage resulting from the installation, use, or misuse of this product. Specifications subject to change without notice. REV 2011.03.22

# QUALITY MANAGEMENT SYSTEM **CERTIFIED BY DNV**

= ISO 9001:2008 ===