508FX2 Industrial Ethernet Switch

N-Tron Networking Series

▶▶▶ Industrial Ethernet Switch

PRODUCT FEATURES

- Full IEEE 802.3 and 1613 Compliance
- NEMA TS1/TS2 Compliance
- American Bureau of Shipping (ABS) Type Approval
- Six (6) 10/100 BaseTX RJ-45 Ports
- Two (2) 100BaseFX Ports, ST (shown) or SC
- -40ºC to 85ºC Operating Temperature
- Auto Sensing 10/100BaseTX, Duplex, and MDIX
- Store-and-Forward Technology
- Up to 1.6 Gb/s Maximum Throughput
- Rugged Industrial DIN-Rail Enclosure
- Redundant Power Inputs (10-30 VDC)
- Bi-Color LEDs For Link, Speed, Activity & Duplex Status

Advanced Management Functions (With -A option only):

- IGMP Snooping
- VLAN
- QoS
- Trunking and Mirroring
- N-View™ (Remote Monitoring Using OPC Technology)



PRODUCT OVERVIEW

The N-TRON® 508FX2 Series Industrial Ethernet Switch offers outstanding performance and ease of use. It is ideally suited for connecting Ethernet-enabled industrial and/or security equipment and can be optionally configured with advanced Ethernet communication management functions.

Industrial Packaging and Specifications

The 508FX2, designed to operate in industrial environments, is housed in a rugged DIN-rail-mounted steel enclosure. Optional panel and rack mount kits are also available. The switch comes standard with extended temperature rating, extended shock and vibration specs, redundant power inputs, and a high MTBF (greater than 2M hours).

Ease of Use

The 508FX2 requires no setup unless the advanced port functions are utilized. The six 10/100BaseTX ports are auto sensing and auto configuring. Each copper port automatically negotiates maximum speed and performance by default. The two fiber optic ports support full 200Mb/s communications via 100BaseFX. Bi-color LEDs are provided to display the link status, link speed and activity of each port as well as power on/off status.

Performance

The 508FX2 supports up to 4,000 MAC addresses and uses advanced IEEE 802.3 Fast Ethernet 10/100BaseTX switching technology to eliminate network collisions and increase network determinism. A high-speed processor and backplane allow full-wire speed capability on all ports simultaneously.

ADVANCED MANAGEMENT FEATURES

The 508FX2-A offers several management functions that can be easily configured using the COM Port (DB 9 connector located on the right side of the switch).

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

VLAN: Virtual Local Area Network allows switch segmentation in order to create two or more separate local area network domains.

QoS: Quality of Service streamlines network operation by managing packet priority. The primary goal of QoS is to improve the latency of prioritized Ethernet packets required for ring management, real-time and other interactive applications.

Trunking: Trunking (aggregation) enables multiple physical ports to be linked together and function as one uplink to another identically configured trunking-capable switch. This feature increases the bandwidth between switches and creates redundancy for applications requiring high levels of fault tolerant operation.

Port Mirroring: Port mirroring allows traffic on one port to be duplicated and sent to a designated mirror port. This function can be used to monitor Ethernet traffic on the designated source port using the assigned mirror port.

N-View OPC Switch Monitoring: (With -A or -N Option Only) N-View OPC server software can be used with popular HMI software packages to transmit operational information from N-View-capable switches. This technology enables network traffic monitoring, as well as alarm and trending details. In all, the N-View OPC Server collects 41 different traffic variables per port and five system level variables per switch, providing a complete overview of network load, service quality, and packet traffic. Empowered with N-View OPC Server data, users can resolve network problems faster and make more informed decisions about overall system performance.

▶▶▶ 508FX2 Industrial Ethernet Switch Specifications

Switch Properties

Number of MAC Addresses:	4,000
Aging Time:	20s, Programmable (-A option)
Latency Typical:	2.1 µs
Switching Method:	Store & Forward

Case Dimensions

Height:	2.3" (5.8 cm)
Width:	5.9" (15.0 cm)
Depth:	3.8" (9.7 cm)
Weight:	1.6 lbs (0.8 kg)
Din-Rail:	35 mm

Electrical

Redundant Input Voltage:	10-30 VDC
Input Current:	380 mA @ 24VDC
BTU/hr:	31.1 @ 24VDC
Inrush:	8.5 amp/0.2ms @ 24VDC

Environmental

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

Shock and Vibration (bulkhead mounted)

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

Reliability

MTBF:	>2 Million Hours

Serial Configuration Port

Com Parameters:	9600,n,8,1

Network Media

10BaseT:	≥Cat3 Cable
100BaseTX:	≥Cat5 Cable
100BaseFX:	
Multimode:	50-62.5/125µm
Singlemode:	7-10/125µm

Connectors

10/100BaseTX:	Six (6) RJ-45 Copper Ports
100BaseFX:	Two (2) SC or ST Duplex Ports

Recommended Wiring Clearance

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

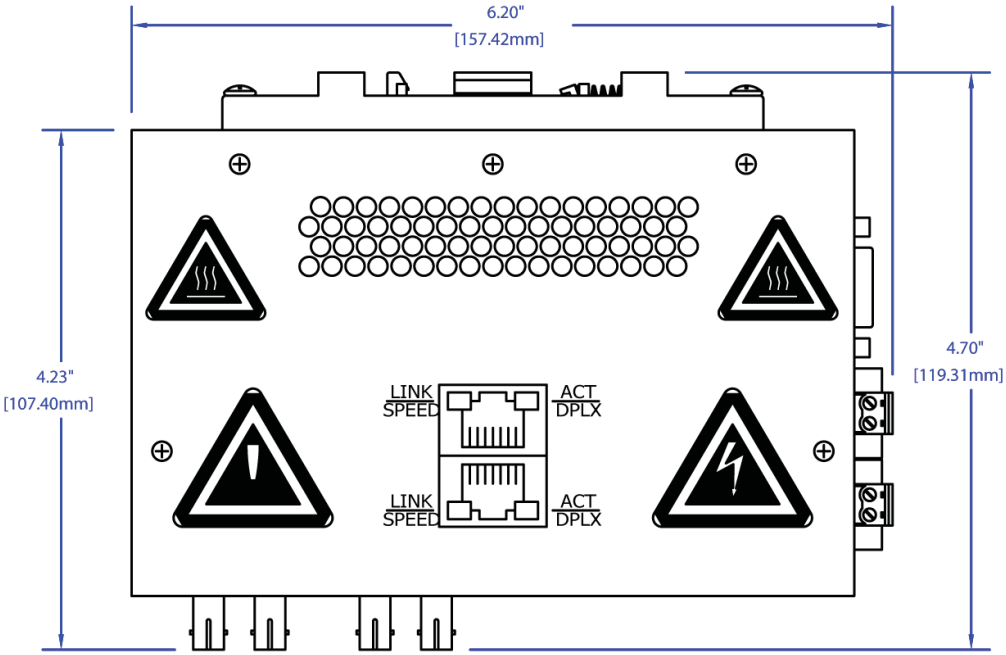
* Multimode Fiber Optic Cable
** Singlemode Fiber Optic Cable

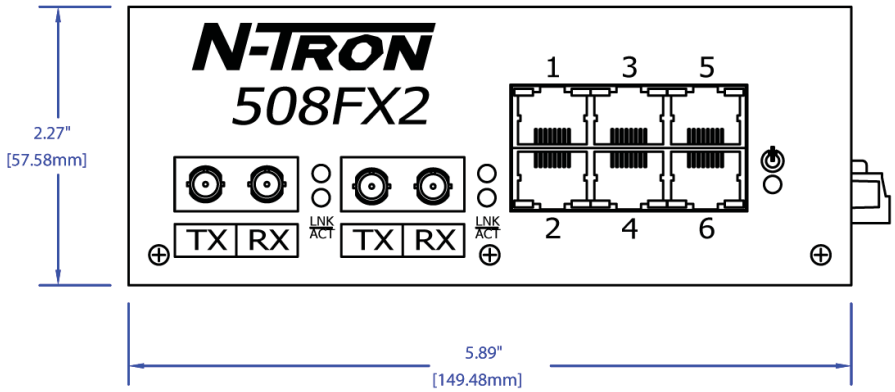
Regulatory Approvals

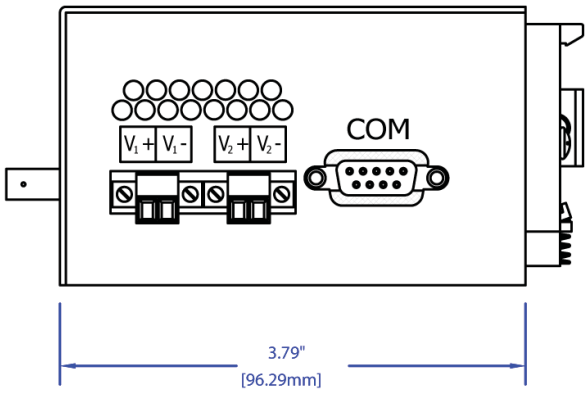
FCC/CE (CFR 47, Part 15, Subpart B, Class A); ICES-003
EMC Dir 89/336/EEC, EN 50204, EN 55011
EN61000-4-2, 3, 4, 5, 6, 8,11, EN61000-6-2, 4
ANSI C63.4
UL /cUL: Class I, Div 2, Groups A, B, C, D and T4
UL 508 and UL 1604
CAN/CSA-C22.2 No.213, ATEX II 3 G Ex nA
IEEE 1613 for Electric Utility Substations
ABS Type Approval for Shipboard Applications
GOST-R Certified, RoHS Compliant

Designed to comply with:
NEMA TS1/TS2 for Traffic Control




6.20"
[157.42mm]
4.23"
[107.40mm]
4.70"
[119.31mm]
LINK
SPEED
ACT
DPLX
LINK
SPEED
ACT
DPLX


N-TRON
508FX2
1 3 5
2 4 6
TX RX
LNK
ACT
TX RX
LNK
ACT
2.27"
[57.58mm]
5.89"
[149.48mm]


V1+ V1-
V2+ V2-
COM
3.79"
[96.29mm]

ORDERING INFORMATION

PART NUMBER	DESCRIPTION
508FX2-A-XX	8-port (6 10/100BaseTX, 2 100BaseFX Fiber Uplink, Multimode) Industrial Ethernet Switch, DIN-Rail with Advanced Management Features (includes N-View)
508FXE2-A-XX-YY	8-port (6 10/100BaseTX, 2 100BaseFX Fiber Uplink, Singlemode) Industrial Ethernet Switch, DIN-Rail with Advanced Management Features (includes N-View)
508FX2-N-XX	8-port (6 10/100BaseTX, 2 100BaseFX Fiber Uplink, Multimode) Industrial Ethernet Switch, DIN-Rail with N-View OPC switch monitoring
508FXE2-N-XX-YY	8-port (6 10/100BaseTX, 2 100BaseFX Fiber Uplink, Singlemode) Industrial Ethernet Switch, DIN-Rail with N-View OPC switch monitoring
508FX2-XX	8-port (6 10/100BaseTX, 2 100BaseFX Fiber Uplink, Multimode) Industrial Ethernet Switch, DIN-Rail
508FXE2-XX-YY	8-port (6 10/100BaseTX, 2 100BaseFX Fiber Uplink, Singlemode) Industrial Ethernet Switch, DIN-Rail
NTPS-24-1.3	N-Tron Power Supply (1.3 amp @ 24 VDC)
900-PM	Panel Mount Kit - converts switch from DIN-rail to panel mount.
URMK	Universal Rack Mount Kit
500-UTA89	Metal DIN-Rail Clip

Where:
A = Advanced Management Features (includes N-View)
N = N-View OPC Switch Monitoring
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

red lion®

www.redlion.net

Connect. Monitor. Control.

Americas
sales@redlion.net

Asia-Pacific
asia@redlion.net

Europe
Middle East
Africa
europe@redlion.net

+1 (717) 767-6511

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