![Chipsmall logo]

Chipsmall Limited consists of a professional team with an average of over 10 year of expertise in the distribution of electronic components. Based in Hongkong, we have already established firm and mutual-benefit business relationships with customers from,Europe,America and south Asia,supplying obsolete and hard-to-find components to meet their specific needs.

With the principle of "Quality Parts,Customers Priority,Honest Operation,and Considerate Service",our business mainly focus on the distribution of electronic components. Line cards we deal with include Microchip,ALPS,ROHM,Xilinx,Pulse,ON,Everlight and Freescale. Main products comprise IC,Modules,Potentiometer,IC Socket,Relay,Connector.Our parts cover such applications as commercial,industrial, and automotives areas.

We are looking forward to setting up business relationship with you and hope to provide you with the best service and solution. Let us make a better world for our industry!

Contact us

red lion®

N-Tron® Series

308FX2, 309FX, 316TX, 317FX

Industrial Ethernet Switches

CONTACT INFORMATION:

AMERICAS

York, PA: +1 (717) 767-6511
Mobile, AL: +1 (251) 342-2164
Ballston Lake, NY: +1 (518) 877-5173
Hours: 8am-6pm Eastern Standard Time
(UTC/GMT -5 hours)

ASIA-PACIFIC

Shanghai, P.R. China: +86 21-6113-3688 x767
Hours: 10am-6pm China Standard Time
(UTC/GMT +8 hours)

EUROPE

The Netherlands: +31 33-4723-225
Hours: 9am-6pm Central European Time
(UTC/GMT +1 hour)

Website: www.redlion.net

Email: customer.service@redlion.net

Preface

Disclaimer

Portions of this document are intended solely as an outline of methodologies to be followed during the maintenance and operation of N-Tron® series 300 TX/FX equipment. It is not intended as a step-by-step guide or a complete set of all procedures necessary and sufficient to complete all operations.

While every effort has been made to ensure that this document is complete and accurate at the time of release, the information that it contains is subject to change. Red Lion Controls is not responsible for any additions to or alterations of the original document. Industrial networks vary widely in their configurations, topologies, and traffic conditions. This document is intended as a general guide only. It has not been tested for all possible applications, and it may not be complete or accurate for some situations.

Users of this document are urged to heed warnings and cautions summarized at the front of the document, such as electrical hazard warnings.

Compliance Information

It is recommended that the owner of this equipment determine and ensure conformance with any specific and applicable local regulations.

Part 15 of the Federal Communications Commission (FCC) - A Rules: Interference

Every effort has been made to ensure that this equipment is designed to comply with the limits for a Class A digital device, as described in the FCC Rules.

This product complies with Part 15 of the FCC-A Rules.

Operation is subject to the following conditions:

1. This device may not cause harmful Interference

2. This device must accept any interference received, including interference that may cause undesired operation. This equipment has been tested and found to comply with the limits for a Class A digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. Operation of this device in a residential area is likely to cause harmful interference in which case the user will be required to correct the interference at their own expense.

Industry Canada

This Class A digital apparatus meets all requirements of the Canadian Interference Causing Equipment Regulations. Operation is subject to the following two conditions; (1) this device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

Cet appareillage numérique de la classe A répond à toutes les exigences de l'interférence canadienne causant des règlements d'équipement. L'opération est sujette aux deux conditions suivantes: (1) ce dispositif peut ne pas causer l'interférence nocive, et (2) ce dispositif doit accepter n'importe quelle interférence reçue, y compris l'interférence qui peut causer l'opération peu désirée.

red lion®

Environmental Impact Statement

Red Lion equipment contains no hazardous materials as defined by the United States Environmental Protection Agency (USEPA). Red Lion recommends that all failed product be returned to Red Lion for failure analysis and proper disposal.

Toxic Emissions

Red Lion equipment releases no toxic emissions.

Trademark Acknowledgments

Ethernet is a registered trademark of Xerox Corporation.

Applicable 300 TX/FX Industrial Ethernet Switches

This User and Installation Guide applies to the 300 TX/FX models presented in Table 1.

Table 1. Ordering Guide

Part Number	Description
308FX2-N-XX	Eight port - six 10/100BaseTX RJ-45 ports and two 100BaseFX multimode fiber ports with ST or SC connectors
308FXE2-N-XX-YY	Eight port - six 10/100BaseTX RJ-45 ports and two 100BaseFX singlemode 15km, 40km or 80km fiber ports with ST or SC connectors
309FX-N-XX	Nine port - eight 10/100BaseTX RJ-45 ports and one 100BaseFX multimode fiber port with ST or SC connectors
309FXE-N-XX-YY	Nine port - eight 10/100BaseTX RJ-45 ports and one 100BaseFX singlemode 15km, 40km or 80km fiber port with ST or SC connectors
316TX-N	16 ports- 16 10/100BaseTX RJ-45 ports
317FX-N-XX	17 port - 16 10/100BaseTX RJ-45 ports and one 100BaseFX multimode port with ST or SC connectors
317FXE-N-XX-YY	17 port - 16 10/100BaseTX RJ-45 ports and one 100BaseFX singlemode 15km, 40km or 80km fiber port with ST or SC connectors

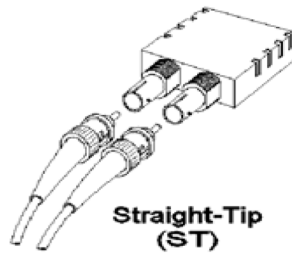Where:

N = N-View Option

E = Singlemode

XX = ST for ST style fiber connector, SC for SC style fiber connector
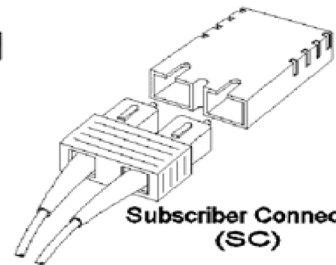
YY = Segment length

15 for 15km maximum fiber segment length

40 for 40km maximum fiber segment length

80 for 80km maximum fiber segment length

Straight-Tip (ST)   Subscriber Connector (SC)

308FX2   309FX   316TX   317FX

Release Notes and Document Updates

The hard copy and electronic media versions of this document are revised only at major releases and therefore, may not always contain the latest product information. As needed, Documentation Notes and/or Product Bulletins will be provided between major releases to describe any new information or document changes.

The latest online version of this document and all product updates can be accessed through the Red Lion web site at http://www.redlion.net

Publication History

The following information lists the release history of this document.

Issue/Revision	Release Date	Content Description
Revised 2013-06-21	June 2013	Document Updates
Revised 2015-11-09	November 2015	Added safety information and reformatted document.

Related Documents

Visit the Technical Resources page on the Red Lion website at the following link to view available documents related to this product.

http://www.redlion.net/documentation/red-lion-documentation

Document Comments

Red Lion appreciates all comments that will help us to improve our documentation quality. The user can submit comments through the Red Lion Customer Service. Simply email us at customer.service@redlion.net.

Additional Product Information

Additional product information can be obtained by contacting the local sales representative or Red Lion through the contact numbers and/or e-mail addresses listed on the inside of the front cover.

Warnings and Cautions / Avertissements et mises en garde

Warnings apply to situations where personal injury or death may result.

Mises en garde s'appliquent aux situations où des blessures corporelles ou la mort peuvent en résulter.

Cautions apply to where reduced function or damage to equipment may result.
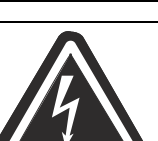
Avertissements s'appliquent à où fonction réduite ou d'endommagement de l'équipement peut entraîner.

General Safety Cautions and Warnings / Précautions et avertissements de sécurité générale

CAUTION: Do not perform any services on the unit unless qualified to do so. Do not substitute unauthorized parts or make unauthorized modifications to the unit.

ATTENTION: Ne pas effectuer de services sur l'appareil s'il n'est pas qualifié pour le faire. Ne pas substituer pièces non autorisées ou de modifications non autorisées de l'appareil.

⚡	**WARNING -** Do not operate the unit with the top cover removed, as this could create a shock or fire hazard.
	AVERTISSEMENT - Ne pas faire fonctionner l'unité avec le couvercle retiré, ceci pourrait créer une décharge électrique ou un incendie.

⚠	**CAUTION:** Do not block any air vents on the unit.
	ATTENTION: N'obstruez pas les fentes d'aération de l'unité.

⚠	**CAUTION:** Do not operate the equipment in a manner not specified by this manual.
	ATTENTION: Ne pas faire fonctionner l'équipement d'une manière non spécifiée par ce manuel.

⚠	**CAUTION:** If the equipment is used in a manner not specified by Red Lion, the protection provided by the equipment may be impaired.
	ATTENTION: Si l'équipement est utilisé d'une façon non spécifiée par Red Lion, la protection fournie par l'équipement peut être compromise.

Electrical Safety Warnings / Avertissements de sécurité électrique

⚡	**WARNING:** Do not work on equipment or cables during periods of lightning activity.
	AVERTISSEMENT: Ne pas travailler sur le matériel ou les câbles pendant les périodes d'activité de la foudre.

⚡	**WARNING:** Properly ground the unit before connecting anything else to the unit. Units not properly grounded may result in a safety risk and could be hazardous and may void the warranty. See the grounding technique section of this Hardware Guide for proper ways to ground the unit.
	AVERTISSEMENT: Correctement à la terre de l'unité avant tout raccordement à l'unité. Unités pas correctement mise à la terre peut entraîner un risque de sécurité et pourraient être dangereux et peut annuler la garantie. Voir la section technique de mise à la terre de ce mode d'emploi des moyens appropriés à la masse de l'appareil.

⚡	**WARNING:** Disconnect the power cable before removing the enclosure top.
	AVERTISSEMENT: Débranchez le câble d'alimentation avant de retirer le boîtier supérieur.

red lion®

⚠	**WARNING:** Do not operate the unit with the top cover removed. **AVERTISSEMENT :** Ne pas faire fonctionner l'unité avec le capot retiré.

⚠	**CAUTION:** Observe proper DC Voltage polarity when installing power input cables. Reversing voltage polarity can cause permanent damage to the unit and voids the warranty. **ATTENTION:** Respecter la polarité correcte de tension DC lors de l'installation des câbles d'alimentation d'entrée. Inversion de polarité de tension peut causer des dommages permanents à l'appareil et annule la garantie.

Environmental Safety Cautions and Warnings / Sécurité environnementale mises en garde et avertissements

⚠	**WARNING:** Disconnect the power and allow to cool 5 minutes before touching. **AVERTISSEMENT:** Déconnectez le câble d'alimentation et laisser refroidir 5 minutes avant de la toucher.

⚠	**WARNING:** Do not operate the equipment in the presence of flammable gases or fumes. Operating electrical equipment in such an environment constitutes a definite safety hazard. **AVERTISSEMENT :** Ne pas utiliser le matériel en présence de gaz ou de vapeurs inflammables. L'utilisation de matériel électrique dans un tel environnement constitue un danger certain.

UL/cUL Hazardous Location Warning / UL/cUL Avertissement d'emplacement dangereux

⚠	**WARNING – Explosion Hazard –** Do not connect or disconnect any connections while circuit is live unless area is known to be non-hazardous. **AVERTISSEMENT - Risque d'explosion -** Ne pas brancher ou débrancher les connexions lorsque le circuit est sous tension sauf si la zone est connue pour être non dangereux.

⚠	**WARNING:** Install only in accordance with Local and National Codes of authorities having jurisdiction. **AVERTISSEMENT:** Installer uniquement, conformément aux codes locaux et nationaux des autorités ayant compétence.

⚠	**CAUTION:** Power must be supplied by an isolating source, and a 3.3A max rated UL recognized fuse must be installed immediately before the unit. **ATTENTION:** celui-ci doit être alimenté par une source à isolation et un 3.3A nominale max. fusible homologué UL doit être installé immédiatement avant l'unité.

red lion®

⚠	**CAUTION:** Class I, Division 2 installations require that all devices connected to this product must be UL listed for the area in which it is installed. **ATTENTION:** Classe I, division 2 installations nécessitent que tous les périphériques connectés à ce produit doit être homologué UL pour la zone dans laquelle il est installé.
⚠	**CAUTION:** Only UL listed wiring with temperature ratings greater than 90°C permitted for Class I, Division 2 installations operating at temperatures up to 70°C ambient. **ATTENTION:** uniquement listés UL câblage avec cotes de température supérieure à 90 °C Permis de classe I, division 2 équipements fonctionnant à des températures allant jusqu'à 70°C de température ambiante.
⚠	**CAUTION:** Limited Operating Voltage range of 12-30V for Class I, Division 2 installations. **ATTENTION:** limiter la plage de tension de fonctionnement de 12-30 V pour la classe I, division 2 installations..
⚠	**CAUTION:** This equipment is suitable for use in Class I, Division 2, Groups A, B, C, and D or non-hazardous locations only. **ATTENTION:** Cet équipement est adapté pour une utilisation dans la classe I, Division 2, Groupes A, B, C et D ou non dangereux endroits seulement.

Laser Safety Warning / Consignes de sécurité relatives au laser

⚠	**CAUTION (FXE-40 and FXE-80 only):** CLASS 1 LASER PRODUCT. Do not stare into the laser. **ATTENTION (FXE-40 et FXE-80 uniquement):** PRODUIT LASER CLASSE 1. Ne pas regarder dans le laser.

red lion®

Section 1   Introduction and Specifications

Introduction

The Red Lion N-Tron® series 308FX2/309FX/316TX/317FX Industrial Ethernet switches support high speed layer 2 switching between ports. The copper ports in this line are Category 5 compliant 10/100-BaseTX connections for high performance network design, and hub/repeater upgrades. These copper ports are capable of auto negotiating 10/100 Mb and half/full duplex communications, or the user can configure these parameters.

The 300 series provides Fast Ethernet connectivity from 8 to 17 ports. These unmanaged switches are available in copper and fiber port combinations for maximum deployment flexibility.They are also optionally available with N-View™ monitoring technology, which can be found in the Red Lion monitored family of products.

308FX2 and 308FXE2

The 308FX2 is an affordable 8 port switch that has 6 copper ports plus two additional multimode fiber optic up-link ports. The two fiber links are capable of 2 Kilometers of 100 Mb communications without the use of repeaters.The 308FXE2 is similar to the 308FX2, but is populated with singlemode extended range fiber optics.

316TX

The 316TX is an affordable 16 port copper port switch.

309FX and 317FX

The 309FX (317FX) is a 9 (17) port switch that has 8 (16) copper ports, plus an additional multimode fiber optic up-link port in the 309FX and in the 317FX. The fiber links are capable of 2 Kilometers of 100 Mb communications without the use of repeaters.

309FXE and 317FXE

The 309FXE (317FXE) is a 9 (17) port switch that is similar to the 309FX (317FX), but with extended range. The FXE versions utilize a singlemode fiber transceiver that is capable of 15-80 Kilometers of 100 Mb communications

All FX, FX2, FXE, and FXE2 models utilize the IEEE compliant SC or ST duplex connector for fiber optic communications. The 10/100Base-TX ports utilize the RJ45 shielded connector.

All N-Tron® series switches come housed in a steel ruggedized DIN-Rail enclosure, designed to withstand the most demanding industrial applications, and have been fully tested and certified at industrial environmental extremes. All units operate on 10-30VDC.

Key Features

- Full IEEE 802.3 & 100Base-FX Compliance
- Full IEEE 1613 Compliance (Communications Networking Devices in Electric Power Stations)
- American Bureau of Shipping (ABS) Type Approval (Maritime and Offshore Applications)
- Extended Environmental Specifications
- Support for Full/Half Duplex Operation
- LED Link/Activity Status Indication
- Autosensing Speed and Flow Control
- Up to 2.6 Gb/s Maximum Throughput
- Industry Standard 35mm DIN-Rail Mounted Enclosure
- Optional N-View™ Monitoring on -N units.

Key Specifications

Table 2.   308FX2/FXE2 Key Specifications

Switch Properties				
# of MAC Addresses	**Aging Time**	**Latency Minimum**	**Backplane Speed**	**Switching Method**
4,000	Programmable	2.2 µs	2.6 Gb/s	Store & Forward
Physical				
Height	**Width**	**Depth**	**Weight**	**DIN-Rail**
5.9 in (15cm)	2.3 in (5.8cm)	3.8 in (9.7cm)	1.7 lbs (0.8kg)	35mm
Electrical				
Redundant Input Voltage	**Input Current**	**Inrush Current**	**Input Ripple**	
10-30 VDC	380mA max. @ 24VDC (max current 1.0 A)	8.5 Amp/0.2 ms @ 24VDC	Less than 100 mV	
Environmental				
Operating and Storage Temperature		**Operating Humidity**	**Operating Altitude**	
-40°C to 85°C		10% to 95% (non condensing)	0 to 10,000 ft.	
Shock and Vibration				
Shock	**Vibration/Seismic**		**Note**	
200g @ 10ms	50g, 5-200Hz, Triaxial		Unit must be bulkhead mounted to achieve these levels.	
Reliability				
MTBF (Mean Time Between Failure)		> Two (2) Million Hours		
Network		**Media**		
10BaseT		> Cat-3 Cable		
100BaseTX		> Cat-5 Cable		
100BaseFX				
Multimode:		50-62.5/125µm		
Singlemode:		7-10/125µm		
Connectors		**Serial Port**		
10/100BaseT	Six (6) RJ45 Copper Ports	Com Parameters	9600, n, 8, 1	
100BaseFX	Two (2) SC or ST Duplex Ports			
Recommended Minimum Wiring Clearance				
Top	1" (2.54 cm)			
Front	4" (10.16 cm)			

red lion®

Table 3.   309FX/FXE Key Specifications

Switch Properties				
# of MAC Addresses	**Aging Time**	**Latency Minimum**	**Backplane Speed**	**Switching Method**
4,000	Programmable	2.2 µs	2.6 Gb/s	Store & Forward
Physical				
Height	**Width**	**Depth**	**Weight**	**DIN-Rail**
5.5 in (13.9cm)	2.3 in (5.8cm)	3.5 in (8.9cm)	1.6 lbs (0.8kg)	35mm
Electrical				
Redundant Input Voltage	**Input Current**	**Inrush Current**	**Input Ripple**	
10-30 VDC	260mA max. @ 24VDC (max current 0.5 A)	8.5 Amp/0.7 ms @ 24VDC	Less than 100 mV	
Environmental				
Operating & Storage Temperature		**Operating Humidity**		**Operating Altitude**
-40°C to 85°C		10% to 95% (non condensing)		0 to 10,000 ft.
Shock and Vibration				
Shock	**Vibration Seismic**		**Note**	
200g @ 10ms	50g, 5-200Hz, Triaxial		Unit must be bulkhead mounted to achieve these levels.	
Reliability				
MTBF (Mean Time Between Failure)	Two (2) Million Hours			
Network		Media		
10BaseT		> Cat-3 Cable		
100BaseTX		> Cat-5 Cable		
100BaseFX				
Multimode:		50-62.5/125µm		
Singlemode:		7-10/125µm		
Connectors			Serial Port	
10/100BaseT	Eight (8) RJ45 Copper Ports		Com Parameters	9600, n, 8, 1
100BaseFX	One (1) SC or ST Duplex Port			
Recommended Minimum Wiring Clearance				
Top	1" (2.54 cm)			
Front	4" (10.16 cm)			

red lion®

Table 4.   316TX Key Specifications

Switch Properties				
# of MAC Addresses	**Aging Time**	**Latency Minimum**	**Backplane Speed**	**Switching Method**
4,000	Programmable	2.2 µs	2.6 Gb/s	Store & Forward
Physical				
Height	**Width**	**Depth**	**Weight**	**DIN-Rail**
7.4 in (18.8cm)	2.3 in (5.8cm)	3.5 in (8.9cm)	1.9 lbs (0.9 kg)	35mm
Electrical				
Redundant Input Voltage	**Input Current**	**Inrush Current**	**Input Ripple**	
10-30 VDC	400mA max. @ 24VDC (max current 1.0 A)	7.0 Amp/0.8 ms @ 24VDC	Less than 100 mV	
Environmental				
Operating & Storage Temperature		**Operating Humidity**		**Operating Altitude**
-40°C to 85°C		10% to 95% (non condensing)		0 to 10,000 ft.
Shock and Vibration				
Shock	**Vibration Seismic**		**Note**	
200g @ 10ms	50g, 5-200Hz, Triaxial		Unit must be bulkhead mounted to achieve these levels.	
Reliability				
MTBF (Mean Time Between Failure)		Two (2) Million Hours		
Network		Media		
10BaseT		> Cat-3 Cable		
100BaseTX		> Cat-5 Cable		
Connectors		Serial Port		
10/100BaseT	Sixteen (16) RJ45 Copper Ports	Com Parameters	9600, n, 8, 1	
Recommended Minimum Wiring Clearance				
Top	1" (2.54 cm)			
Front	2" (5.08 cm)			

Table 5.   317FX/FXE Key Specifications

Switch Properties				
# of MAC Addresses	**Aging Time**	**Latency Minimum**	**Backplane Speed**	**Switching Method**
4,000	Programmable	2.2 µs	2.6 Gb/s	Store & Forward
Physical				
Height	**Width**	**Depth**	**Weight**	**DIN-Rail**
7.4 in (18.8cm)	2.3 in (5.8cm)	3.5 in (8.9cm)	1.9 lbs (0.9kg)	35mm
Electrical				
Redundant Input Voltage	**Input Current**	**Inrush Current**	**Input Ripple**	
10-30 VDC	440mA max. @ 24VDC (max current 1.0 A)	8.5 Amp/0.8 ms @ 24VDC	Less than 100 mV	
Environmental				
Operating & Storage Temperature		**Operating Humidity**		**Operating Altitude**
-40°C to 85°C		10% to 95% (non condensing)		0 to 10,000 ft.
Shock and Vibration				
Shock	**Vibration Seismic**			
200g @ 10ms	50g, 5-200Hz, Triaxial			
Reliability				
MTBF (Mean Time Between Failure)	Two (2) Million Hours			
Network		Media		
10BaseT		> Cat-3 Cable		
100BaseTX		> Cat-5 Cable		
100BaseFX				
Multimode:		50-62.5/125µm		
Singlemode:		7-10/125µm		
Connectors		Serial Port		
10/100BaseT	Sixteen (16) RJ45 Copper Ports	Com Parameters		9600, n, 8, 1
100BaseFX	One (1) SC or ST Duplex Fiber Port			
Recommended Minimum Wiring Clearance				
Top	1" (2.54 cm)			
Front	4" (10.16 cm)			

red lion®

Table 6. Fiber Transceiver Characteristics FX/FXE Models

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

  * = Multimode   **= Singlemode

Regulatory Approvals

Safety

Suitable for use in Class I, Division 2, Groups A, B, C and D Hazardous Locations, or Nonhazardous Locations only.

ATEX Zone 2, Category Ex nA IIC Gc DEMKO 03 ATEX 0316686U.

EMI

- EN61000-6-4, EN55011 - Class A
- FCC 47 CFR, Part 15, Subpart B - Class A

EMS

- EN61000-6-2
- EN61000-4-2 (ESD)
- EN61000-4-3 (RS)
- EN61000-4-4 (EFT)
- EN61000-4-5 (Surge)
- EN61000-4-6 (Conducted Disturbances)

Conducted Low Frequency: IEC60533

Shock: IEEE 1613 (250 mm)

Vibration

- IEEE 1613 (V.S.4 150mm/s)
- IEC60068-2-6 (Test F_c)

Cold: IEC60068-2-1

Dry Heat: IEC60068-2-2

Damp Heat: IEC60068-2-30 (Test D_b)

Certifications

GOST-R Certified

II 3 G EX nA IIC Gc

Section 2   Installation

Introduction

This sections contains the information and procedures necessary to unpack, inspect, install and connect the N-Tron® Series 300 TX/FX models.

Unpacking

Remove all the equipment from the packaging, and store the packaging in a safe place.

Inspection

Please ensure the shipping package contains the following items in undamaged condition:

1. 308FX2, 309FX, 316TX, or 317FX switch.
2. Product CD

If the package contents are damaged:

1. Contact your carrier.
2. File any damage claims with the carrier.

Installing/Mounting

Read the following warning before beginning the installation:

Lire l'avertissement suivant avant de commencer l'installation:

⚠	**CAUTION (FXE-40 and FXE-80 only):** CLASS 1 LASER PRODUCT. Do not stare into the laser (fiber optic connector) when installing or operating the equipment. **ATTENTION (FXE-40 et FXE-80 uniquement):** PRODUIT LASER CLASSE 1. PRODUIT LASER DE CLASSE 1. Ne pas regarder fixement le connecteur à fibre optique (laser) lors de l'installation ou le fonctionnement du matériel.
⚠	**WARNING:** Do not work on equipment or cables during periods of lightning activity. **AVERTISSEMENT:** Ne pas travailler sur le matériel ou les câbles pendant les périodes d'activité de la foudre.
⚠	**WARNING – Explosion Hazard –** Do not connect or disconnect any connections while circuit is live unless area is known to be non-hazardous. **AVERTISSEMENT - Risque d'explosion -** Ne pas brancher ou débrancher les connexions lorsque le circuit est sous tension sauf si la zone est connue pour être non dangereux.

⚠	**WARNING:** Disconnect the power cable before removing the enclosure top. **AVERTISSEMENT:** Débranchez le câble d'alimentation avant de retirer le boîtier supérieur.

⚠	**WARNING:** Do not operate the unit with the top cover removed. **AVERTISSEMENT :** Ne pas faire fonctionner l'unité avec le capot retiré.

ATEX Installation Requirements

This section provides guidance for an installation to meet ATEX certification requirements.

 II 3 G EX nA IIC Gc

1. The conductor size of the phase conductor must be in the range of 16-28AWG (0.08mm²-1.31mm²).

2. Field wiring must be suitable for a minimum of 110°C.

3. Ethernet Switches are intended for mounting in an ATEX-Certified IP54 enclosure in a pollution degree 2 environments as defined by IEC 60664-1.

4. Temperature testing of the Ethernet Switches was conducted on the switch itself in an 85°C air circulating oven and resulted in a Temperature Code of T4. However, end-product temperature testing shall be considered.

5. The end user shall provide bonding means as necessary. All bonding equipment (components) shall be evaluated according to EN 60079-15:2010 and covered by a component certificate for the actual use. When installing bonding components that will pass through an enclosure wall, they must have a minimum of IP54 rating equal to the enclosure. All electrical clearances must be maintained per the manufacturer's instructions of the bonding component or per EN 60079-15:2010.

6. Ethernet Switch requires protection against transients. The end-product shall provide a suitable form of protection that removes the risk of or limits transients to no more than 42V.

7. Products are evaluated to EN 60079-0:2012 and EN 60079-15:2010.

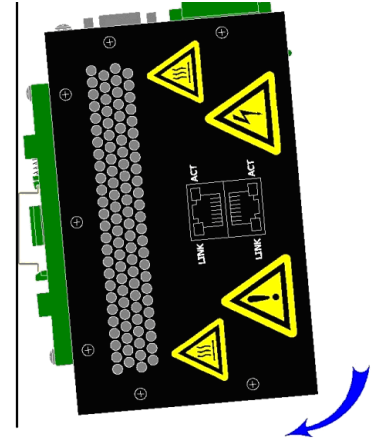**DIN-Rail Mounting - 308FX2 and 309FX**

Install the unit on a standard 35mm DIN-Rail. Recess the 308FX2/309FX unit to allow at least 5" of horizontal clearance for fiber optic cable bend radius.

Vertical Mounting

1. To mount the unit vertically to the 35mm DIN-Rail, place the top edge of the bracket on the back of the unit against the DIN-Rail's top edge at an upward angle.

2. Rotate the unit downward and back against the DIN-Rail until it snaps into place.

Remove Vertical Mounted Unit

1. To remove the vertically mounted unit from 35mm DIN-Rail, carefully apply downward pressure on the unit.

2. Rotate the unit upward and away from the 35mm DIN-Rail and lift up for removal.

Horizontal Mounting

1. To mount the unit horizontally to the 35mm DIN-Rail, place the bottom edge of the bracket on the back of the unit against the DIN-Rail's bottom edge at a downward angle.

2. Rotate the unit upward and back against the DIN-Rail until it snaps into place.

Remove Horizontal Mounted Unit

1. To remove the horizontally mounted unit from 35mm DIN-Rail, carefully apply upward pressure on the unit.

2. Rotate the unit downward and away from the 35mm DIN-Rail and lower it for removal.
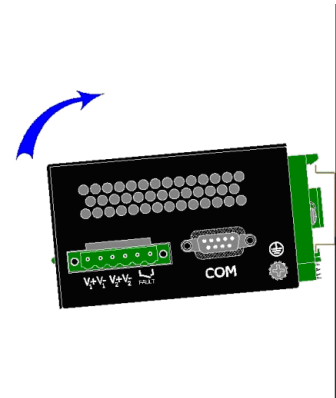
DIN-Rail Mounting - 316TX and 317FX

Install the unit on a standard 35mm DIN-Rail. Recess the 316TX unit to allow at least 3" of horizontal clearance for copper cable bend radius. Recess the 317FX unit to allow at least 5" of horizontal clearance for fiber cable bend radius. There should be at least 4" of clearance on both the top and bottom of the unit to allow proper ventilation.
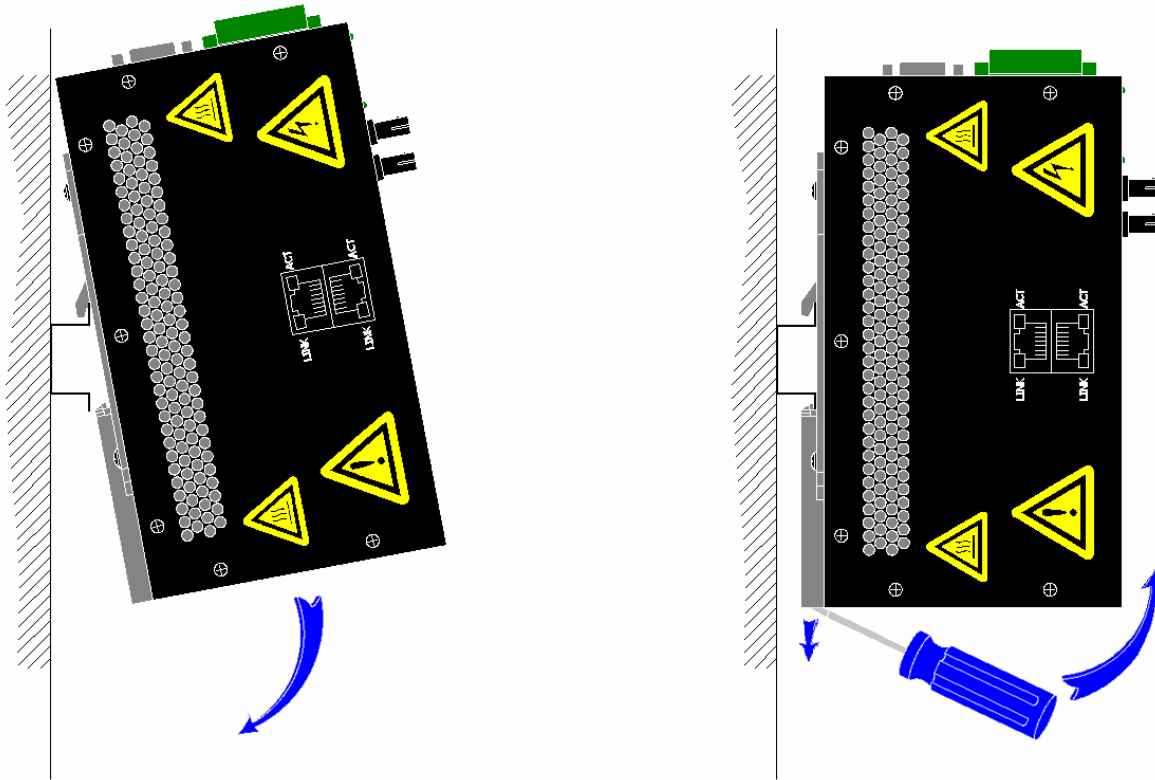
Horizontal Mounting

1. To mount the unit to the 35mm DIN-Rail, place the top edge of the bracket on the back of the unit against the DIN-Rail at a upward angle.

2. Lower the bottom of the unit until it snaps into place.

    Note: When mounting the switch in the vertical position, you must orientate the power connector to the top as shown above for proper ventilation.
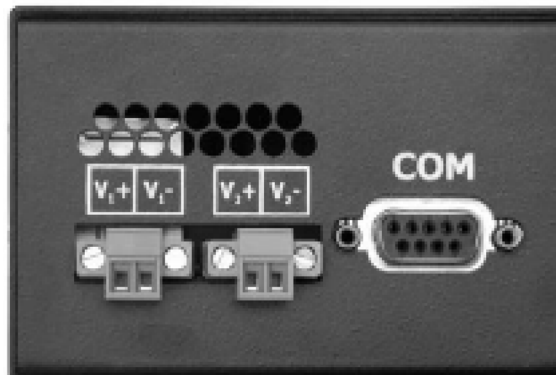
Optional Mounting

Most N-Tron® series products are designed to be mounted on industry standard 35mm DIN-Rail. However, DIN-Rail mounting may not be suitable for all applications. The Universal Rack Mount Kit (P/N: URMK), shown in the figure below, may be used to mount the 316TX/317FX unit to standard 19" racks as an option.

Connections

Power Connection (Side View)

1. Unscrew & Remove the DC Voltage Input Plug from the side header.
2. Install the DC Power Cables into the Plug(s) (observing polarity on unit).
3. Plug the Voltage Input Plug(s) back into the side header.
4. Tightening torque for the terminal block power plug is **0.22 Nm/0.162 Pound Foot**.
5. All LED's will flash ON momentarily.
6. Verify the Power LED stays ON (GREEN).

   Note: Only one plug must be connected to power for minimal operation. Either V1 or V2 can be connected to power for minimal operation. For redundant power operation, V1 and V2 plugs must be connected to separate DC Voltage sources. Use wire sizes of 16-28 gauge ($0.08mm^2$-$1.31mm^2$). The power cord should be limited to less than 10 meters in order to ensure optimum performance.

Recommended 24V DC Power Supplies, similar to:
100VAC/240VAC: N-Tron series NTPS-24-1.3, DC 24V/1.3A