

## MODEL NT100 SERIES – UNMANAGED INDUSTRIAL ETHERNET SWITCHES



- UNMANAGED SWITCH REQUIRES NO CONFIGURATION
- SUPPORTS 10/100 MBPS NETWORKS
- AUTO HALF/FULL DUPLEX NEGOTIATION
- REDUNDANT POWER INPUTS
- AUTO-CROSSING DETECTION SUPPORTS STANDARD AND CROSSOVER ETHERNET CABLES



FOR USE IN HAZARDOUS LOCATIONS:  
 Class I, Division 2, Groups A, B, C, and D  
 or unclassified or non-hazardous locations only.

### GENERAL DESCRIPTION

The NT series is a range of compact IEEE 802.3 layer two network switches with automatic speed, duplex and cable sensing. The series features ultra-robust construction, capable of withstanding environmental extremes for use in mission critical applications.

These affordable, Class I, Division 2 switches feature redundant power inputs, hardened metal enclosures, and 16 kV port protection. Each switch is capable of auto negotiating 10/100 Mb and half/full duplex communications.

### SAFETY SUMMARY

All safety related regulations, local codes and instructions that appear in the literature or on equipment must be observed to ensure personal safety and to prevent damage to either the instrument or equipment connected to it. If equipment is used in a manner not specified by the manufacturer, the protection provided by the equipment may be impaired.

**CAUTION: Risk of Danger.**  
 Read complete instructions prior to installation and operation of the unit.

**WARNING - EXPLOSION HAZARD - SUBSTITUTION OF COMPONENTS MAY IMPAIR SUITABILITY FOR CLASS I, DIVISION 2**

**WARNING - EXPLOSION HAZARD - DO NOT DISCONNECT EQUIPMENT WHILE THE CIRCUIT IS LIVE OR UNLESS THE AREA IS KNOWN TO BE FREE OF IGNITABLE CONCENTRATIONS.**

**WARNING - EXPLOSION HAZARD - DO NOT DISCONNECT EQUIPMENT UNLESS POWER HAS BEEN SWITCHED OFF OR AREA IS KNOWN TO BE NON-HAZARDOUS.**

For 108TX: Use 60/75°C rated copper wire, (0.22Nm) 2 inch-lbs. tightening torque for field installed connectors.

For 104TX & 105TX: Use 95°C rated copper wire, (0.22Nm) 2 inch-lbs. tightening torque for field installed connectors.

### SPECIFICATIONS

1. **POWER:** 10-30 VDC

**NT104TX/NT105TX:** 215 mA max. @ 24VDC

**NT108TX:** 250 mA max. @ 24VDC

2. **LEDs:**

LED	COLOR	DESCRIPTION
	ON	Power is Applied.
	OFF	Power is OFF.
LNK/ACT	ON	Link established, no Activity on cable.
	BLINKING	Link established, Activity on cable
SPD	ON	Link is 100Mbps.
	OFF	Link is 10Mbs.

3. **ENVIRONMENTAL CONDITIONS:**

**Operating Temperature Range:**

**NT104TX/NT105TX:** -40 to +80 °C

**NT108TX:** -40 to +70 °C

**Storage Temperature Range:** -40 to +85 °C

**Operating Humidity:** 10-95%, non-condensing

**Altitude:** Up to 3000 meters.

4. **CONSTRUCTION:** Brushed aluminum housing

5. **CONNECTIONS:**

**Power:** Removable wire clamp screw terminal block.

**Wire Gage Capacity:** 28 AWG to 16 AWG

**Torque:** 2 in/lb (0.22 Nm)

**Ethernet:** RJ-45 UTP ports

6. **MOUNTING:** Snaps onto standard DIN style top hat (T) profile mounting rail according to EN50022 -35 x 7.5 and -35 x 15.

7. **CERTIFICATIONS AND COMPLIANCES:**

UL Listed (N-Tron Incorporated, Part numbers 104TX, 105TX, 108TX. File #E214222)

Safety: Suitable for use in Class I, Division 2, Groups A, B, C and D Hazardous locations, or non-hazardous locations only.

Immunity to Industrial Locations:

EMI: EN61000-6-4, EN55011 - Class A

FCC Title 47, Part 15, Subpart B - Class A

ICES-003 - Class A

EMS: EN61000-6-2

EN61000-4-2 (ESD)

EN61000-4-3 (RS)

EN61000-4-4 (EFT)

EN61000-4-5 (Surge)

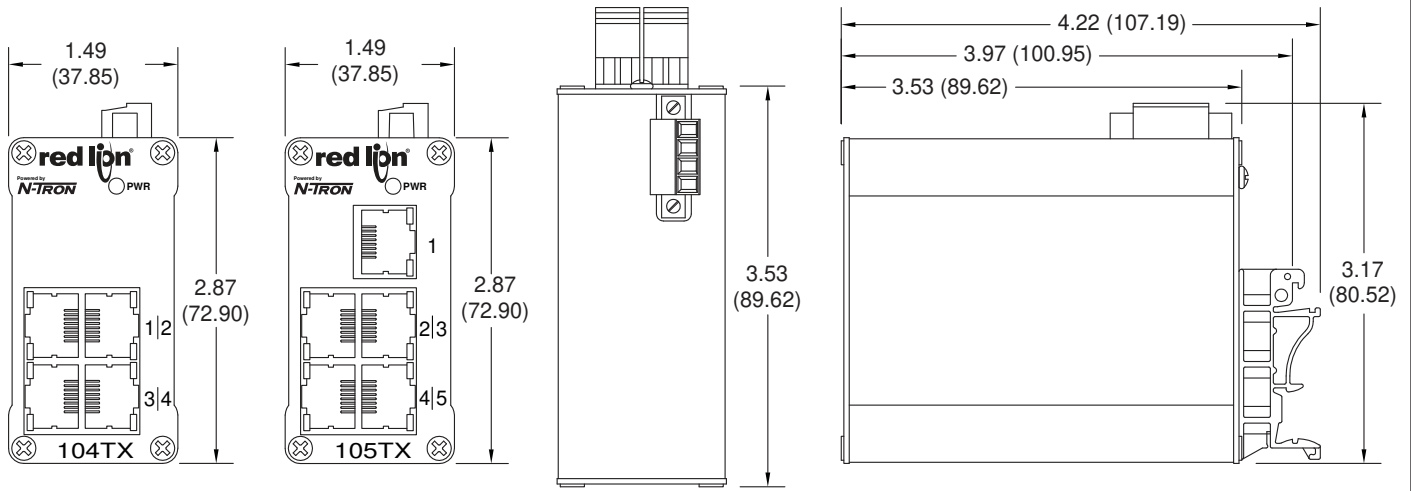
EN61000-4-6 (Conducted Disturbances)

8. **WEIGHT:**

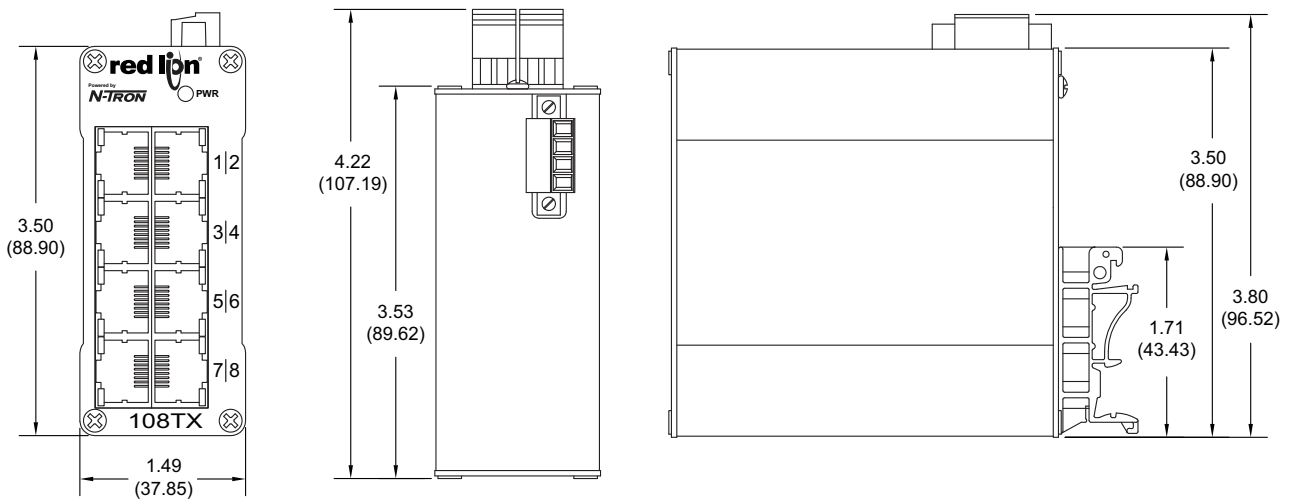
**NT104TX/NT105TX:** 0.6 lbs. (0.27 Kg)

**NT108TX0:** 0.7 lbs. (0.31 Kg)

## DIMENSIONS In inches (mm)



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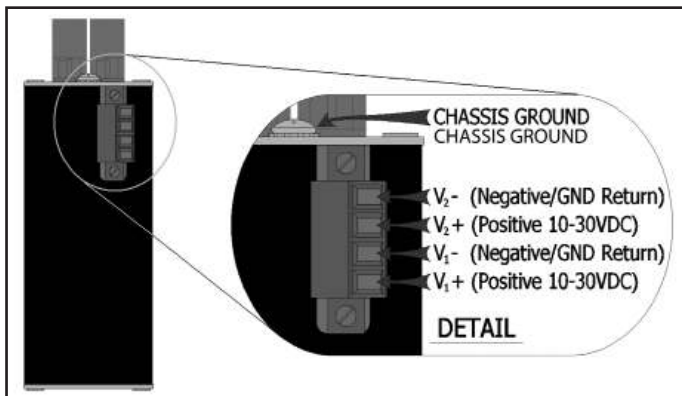


## POWER

Either  $V_1$  or  $V_2$  can be connected to power for minimal operation. For redundant power operation,  $V_1$  and  $V_2$  plugs must be connected to separate DC Voltage sources. Use wire sizes of 16-28 gauge.

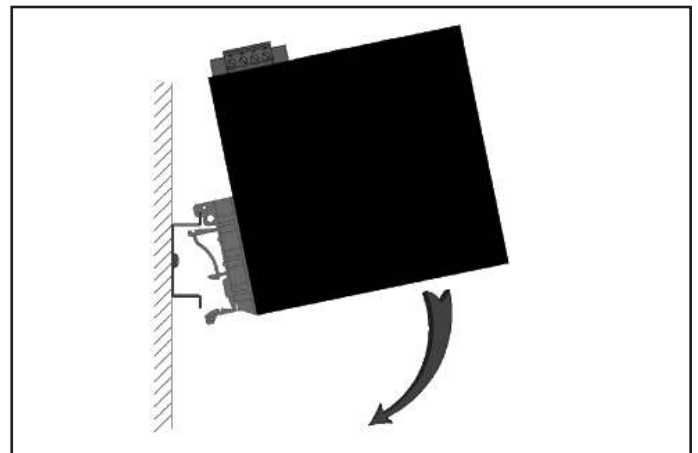


**NOTE:** Must use an NEC Class 2 or Limited Power Source (LPS) rated power supply.

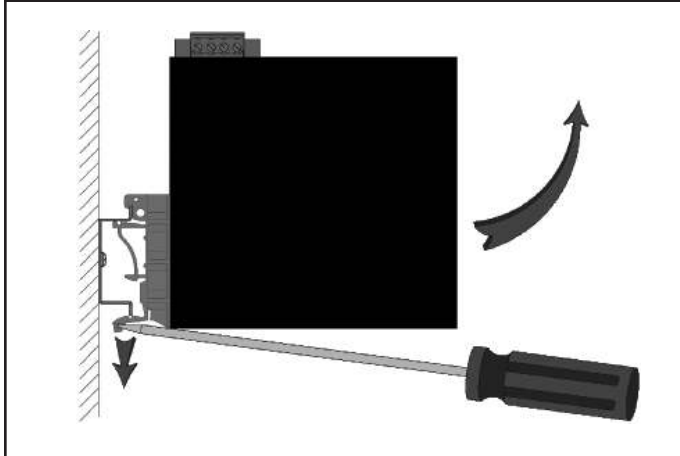


## MOUNTING

To install the plastic clip units to 35mm industrial DIN rail, place the top edge of the included mounting bracket on the back of the unit against the DIN rail at a 15° angle as shown. Rotate the bottom of the unit to the back (away from you) until it snaps into place.



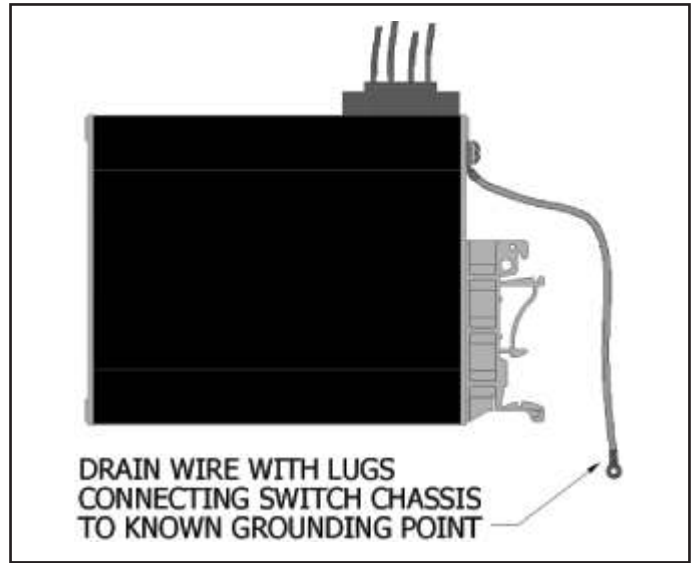
To remove the unit from the DIN rail, place a flat head screwdriver into the release clip found at the bottom of the unit, and apply downward force on the clip until it disengages the bottom of the unit from the DIN rail. Rotate the bottom of the unit towards you and up at an approximate 15° upward angle to completely remove the unit.



NT series switches are designed to be grounded, but the user has been given the flexibility to float the unit when required. The best noise immunity and emissions are obtained when the unit's chassis is connected to earth ground via a drain wire.

Users may run a drain wire & lug from the screw provided on the back face of the enclosure. In the event the provided grounding screw has been lost, care should be taken to limit the penetration of the outer skin by less than 1/4". Failure to do so may cause irreversible damage to the internal components of the switch.

Note: Ensure the power supply is grounded properly before applying power to the grounded switch. This may be verified by using a voltmeter to determine



that there is no voltage difference between the power supply's negative output terminal and the chassis grounding point of the switch.

As an alternative grounding method, both V- legs of the power input connector are connected to the chassis internally on the PCB. Connecting a drain wire to earth ground from one of the V- terminal plugs will ground the switch and the chassis. The power leads from the power source should be limited to 3 meters or less in length.

If the use of shielded cables is required, it is generally recommended to only connect the shield at one end to prevent ground loops and interference with low level signals (i.e. thermocouples, RTD, etc.). Cat5e cables manufactured to EIA-568A or 568B specifications are required for use with NT series switches.

## TROUBLESHOOTING

For further technical assistance, contact technical support at the appropriate company numbers listed.

## ORDERING INFORMATION

MODEL NO.	DESCRIPTION	PART NUMBER
NT100	4-Port Ethernet Switch	NT104TX0
	5-Port Ethernet Switch	NT105TX0
	8-Port Ethernet Switch	NT108TX0

### LIMITED WARRANTY

The Company warrants the products it manufactures against defects in materials and workmanship for a period limited to two years from the date of shipment, provided the products have been stored, handled, installed, and used under proper conditions. The Company's liability under this limited warranty shall extend only to the repair or replacement of a defective product, at The Company's option. The Company disclaims all liability for any affirmation, promise or representation with respect to the products.

The customer agrees to hold Red Lion Controls harmless from, defend, and indemnify RLC against damages, claims, and expenses arising out of subsequent sales of RLC products or products containing components manufactured by RLC and based upon personal injuries, deaths, property damage, lost profits, and other matters which Buyer, its employees, or sub-contractors are or may be to any extent liable, including without limitation penalties imposed by the Consumer Product Safety Act (P.L. 92-573) and liability imposed upon any person pursuant to the Magnuson-Moss Warranty Act (P.L. 93-637), as now in effect or as amended hereafter.

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