# NS-208/NSM-108

Unmanaged 8-Port Industrial 10/100 Base-TX Ethernet Switch

## Highlight Information

NS-208/NSM-108

For NSM-108

For NS-208 Se

## Introduction

The NS-208/NSM-108 has 8 Ethernet Switching ports that support 10/100 Base-TX, with a 10/100M auto negotiation feature and auto MDI/MDI-X function. It can connect 8 workstations and automatically switches the transmission speed (10 Mbps or 100 Mbps) for corresponding connections.

The flow control mechanism is also negotiated. There is link/data rate LEDs for each port to aid trouble-shooting. Port connectors are shielded RJ-45.

## Features

- Automatic MDI/MDI-X crossover for plug-and-play
- Each port supports both 10/100 Mbps speed auto negotiation
- Store-and-forward architecture
- Full duplex IEEE 802.3x and half duplex backpressure flow control
- 2 Gbps high performance memory bandwidth
- Power Inputs +10 $V_{DC}$ ~ +30 $V_{DC}$
- Supports operating temperatures from -40 °C ~ +75 °C
- DIN-Rail

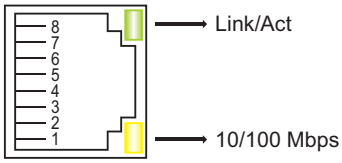
## Specifications

| Models | NS-208 | NSM-108 |
|---|---|---|
| Technology | | |
| Standards | IEEE 802.3, 802.3u, 802.3x | |
| Processing Type | Store & forward, wire speed switching | |
| MAC Addresses | 1024 | |
| Memory Bandwidth | 2 Gbps | |
| Frame Buffer Memory | 512 Kbit | |
| Flow Control | IEEE 802.3x flow control, back pressure flow control | |
| Interface | | |
| RJ-45 Ports | 10/100 Base-TX auto negotiation speed, F/H duplex mode, and auto MDI/MDI-X connection | |
| LED Indicators | Power, 10/100M, Link/Act | |
| Ethernet Isolation | 1500 $V_{rms}$ 1 minute | |
| Frame Ground for EMS Protection | Yes | |
| Cable | Ethernet: 2-pair UTP/STP Cat.3, 4, 5, EIA/TIA-568 100 Ω | |
| | Fast Ethernet: 2-pair UTP/STP Cat. 5, EIA/TIA-568 100 Ω | |
| Power | | |
| Input Voltage Range | +10 $V_{DC}$ ~ +30 $V_{DC}$ (Non-isolation) | |
| Power Consumption | 0.15 A @ 24 $V_{DC}$, +/-5% arrowed with 10M Full duplex | |
| | 0.09 A @ 24 $V_{DC}$, +/-5% arrowed with 100M Full duplex | |
| Protection | Power reverse polarity protection | |
| Frame Ground for EMS Protection | Yes | |
| Connection | 5-Pin Removable Terminal Block | 5-Pin Removable Terminal Block |
| Mechanical | | |
| Casing | Plastic (Flammability UL 94V-0) | Metal (IP20 Protection) |
| Dimensions (W x L x H) | 64 mm x 98 mm x 118 mm | 73 mm x 102 mm x 132 mm |
| Installation | DIN-Rail | DIN-Rail or Wall Mounting |
| Environmental | | |
| Operating Temperature | -40 °C ~ +75 °C | |
| Storage Temperature | -40 °C ~ +85 °C | |
| Ambient Relative Humidity | 10% ~ 90% RH, non-condensing | |

## LED Functions

### LED Indicator Functions

| LED | Color | Description |
|---|---|---|
| Power | Red On | Power is On |
| | Red Off | Power is Off |
| Ethernet Port | Green On | Link/Act |
| | Green Off | Not Networking |
| | Yellow On | Link to 100 Mbps |
| | Yellow Off | Link to 10 Mbps |




### RJ-45 Pin-Out

| Pin# | Signal Name | Function |
|---|---|---|
| 1 | TD+ | Transmit Data |
| 2 | TD- | Transmit Data |
| 3 | RD+ | Receive Data |
| 4 | NC | No Connection |
| 5 | NC | No Connection |
| 6 | RD- | Receive Data |
| 7 | NC | No Connection |
| 8 | NC | No Connection |

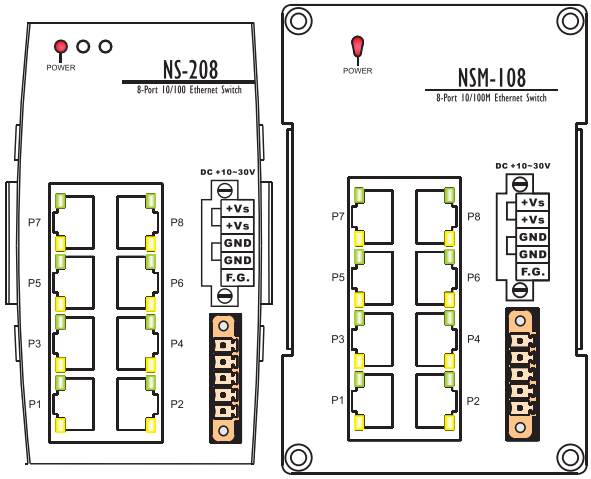
## Pin Function for Terminal Block

External power supply is connected using the removable terminal block:

**+Vs** : Power input +10 $V_{DC}$ ~ +30 $V_{DC}$

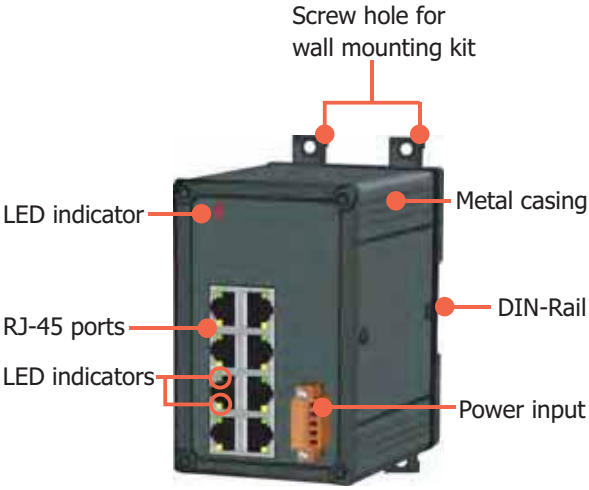
**GND**: Ground

**F.G.** : F.G. stands for Frame Ground (protective ground). It is optional. If you use this pin, it can reduce EMI radiation; improve EMI performance and ESD protection.

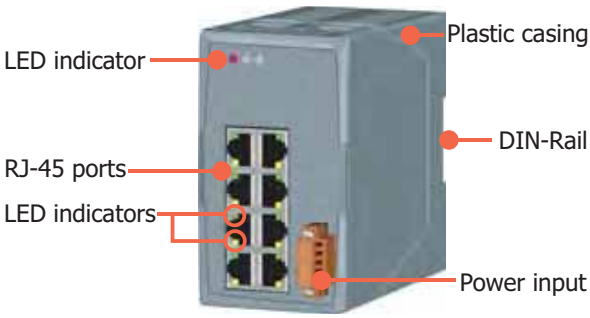



## Appearance

NSM-108

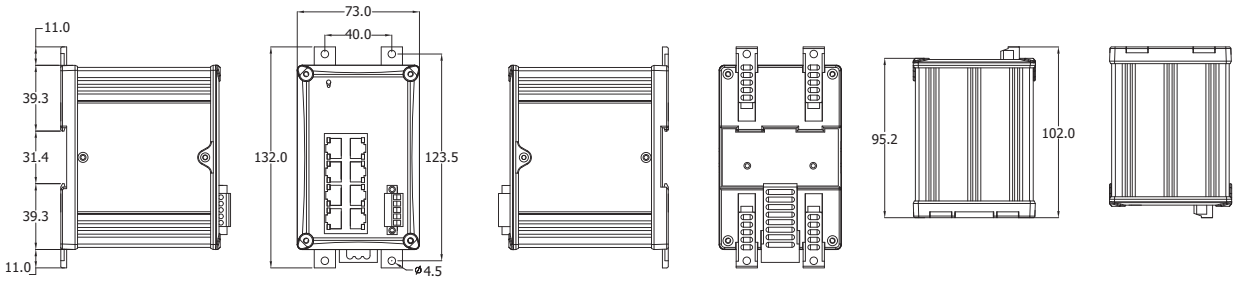



NS-208



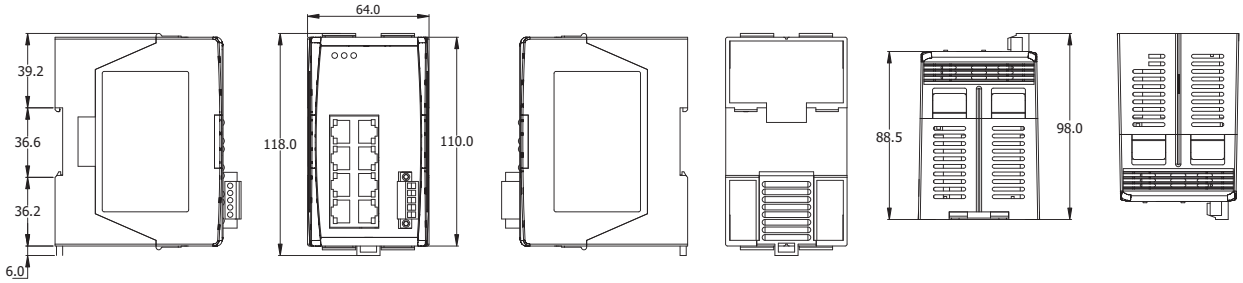
## Dimensions (Unit: mm)

### NSM-108




Left Side View | Front View | Right Side View | Back View | Bottom View | Top View

### NS-208




Left Side View | Front View | Right Side View | Back View | Bottom View | Top View

## Ordering Information

| | |
|---|---|
| NS-208 CR<br>**Art. No. 113245** | Unmanaged 8-Port Industrial 10/100 Base-TX Ethernet Switch with Power Input +10 $V_{DC}$ ~ +30 $V_{DC}$ (RoHS) |
| NSM-108 CR<br>**Art. No. 114574** | Unmanaged 8-Port Industrial 10/100 Base-TX Ethernet Switch with Power Input +10 $V_{DC}$ ~ +30 $V_{DC}$, metal casing (RoHS) |

## Accessories

| | |
|---|---|
| GPSU06-6 | 24V/0.25A, 6 W Power Supply |
| KWM020-1824F | 24V/0.75A, 18 W Power Supply |
| DIN-KA52F | 24V/1.04A, 25 W Power Supply with DIN-Rail Mounting |

spectra

# 75W Single Output Industrial DIN Rail Power Supply DR-75 series

■ Features :

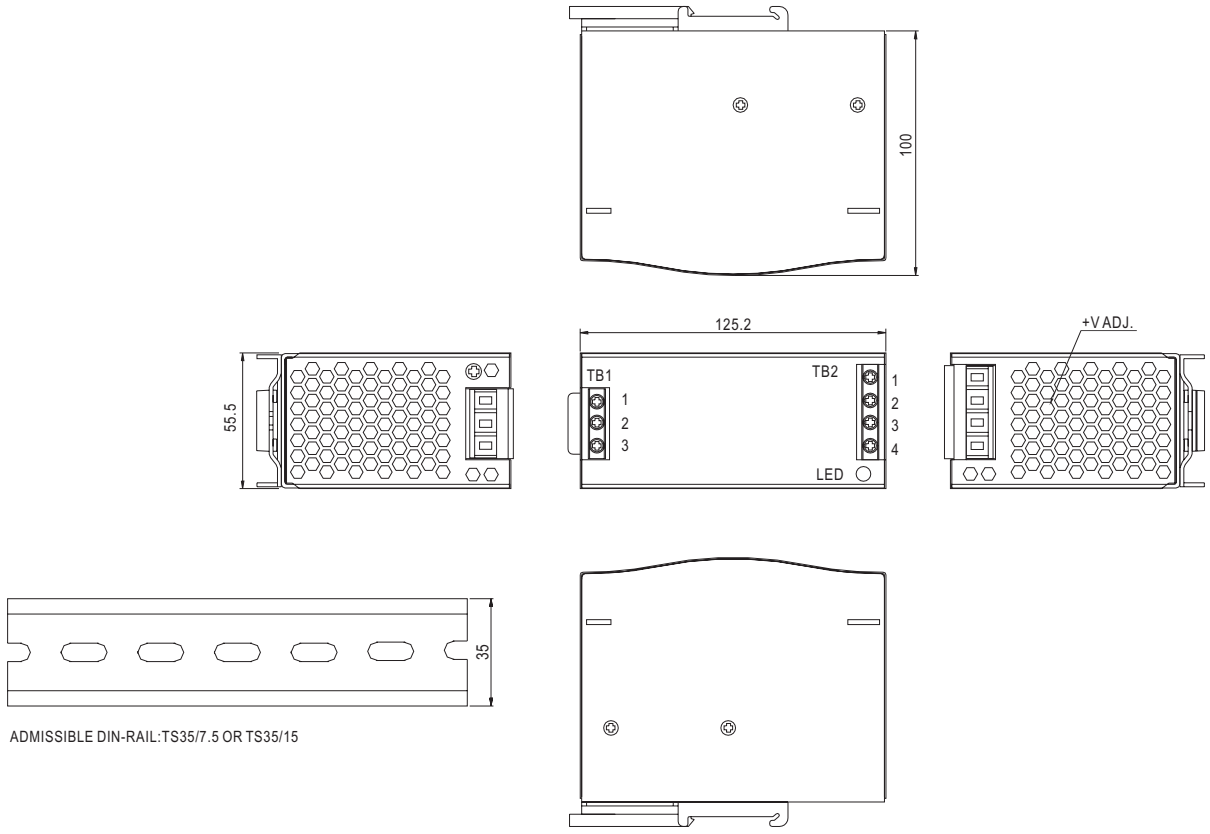
- Universal AC input/Full range
- Protections:Short circuit/Over load/Over voltage/Over temperature
- Cooling by free air convection
- Can be installed on DIN rail TS-35/7.5 or 15
- UL 508(industrial control equipment)approved
- LED indicator for power on
- 100% full load burn-in test
- Fix switching frequency at 50KHz

## SPECIFICATION

| MODEL | | DR-75-12 | DR-75-24 | DR-75-48 |
|---|---|---|---|---|
| OUTPUT | DC VOLTAGE | 12V | 24V | 48V |
| | RATED CURRENT | 6.3A | 3.2A | 1.6A |
| | CURRENT RANGE | 0 ~ 6.3A | 0 ~ 3.2A | 0 ~ 1.6A |
| | RATED POWER | 76W | 76.8W | 76.8W |
| | RIPPLE & NOISE (max.) Note.2 | 100mVp-p | 150mVp-p | 240mVp-p |
| | VOLTAGE ADJ. RANGE | 12 ~ 14V | 24 ~ 28V | 48 ~ 53V |
| | VOLTAGE TOLERANCE Note.3 | ±2.0% | ±1.0% | ±1.0% |
| | LINE REGULATION | ±0.5% | ±0.5% | ±0.5% |
| | LOAD REGULATION | ±1.0% | ±1.0% | ±1.0% |
| | SETUP, RISE TIME | 1000ms, 60ms/230VAC 1800ms, 60ms/115VAC at full load | | |
| | HOLD TIME (Typ.) | 60ms/230VAC 12ms/115VAC at full load | | |
| INPUT | VOLTAGE RANGE | 85 ~ 264VAC 120 ~ 370VDC | | |
| | FREQUENCY RANGE | 47 ~ 63Hz | | |
| | EFFICIENCY (Typ.) | 76% | 80% | 81% |
| | AC CURRENT (Typ.) | 1.6A/115V 0.96A/230V | | |
| | INRUSH CURRENT (Typ.) | COLD START 20A/115VAC 40A/230VAC | | |
| | LEAKAGE CURRENT | <1mA / 240VAC | | |
| PROTECTION | OVER LOAD | 105 ~ 150% rated output power | | |
| | | Protection type : Constant current limiting, recovers automatically after fault condition is removed | | |
| | OVER VOLTAGE | 15 ~ 16.5V | 29 ~ 34V | 58 ~ 65V |
| | | Protection type : Hiccup mode, recovers automatically after fault condition is removed | | |
| | OVER TEMPERATURE | 85℃±5℃ (TSW1) Detect on heat sink of power transistor | | |
| | | Protection type : Shut down o/p voltage, recovers automatically after temperature goes down | | |
| ENVIRONMENT | WORKING TEMP. | -10 ~ +60℃ (Refer to output load derating curve) | | |
| | WORKING HUMIDITY | 20 ~ 90% RH non-condensing | | |
| | STORAGE TEMP., HUMIDITY | -20 ~ +85℃, 10 ~ 95% RH | | |
| | TEMP. COEFFICIENT | ±0.03%/℃ (0 ~ 50℃) | | |
| | VIBRATION | 10 ~ 500Hz, 2G 10min./1cycle, period for 60min. each along X, Y, Z axes | | |
| SAFETY & EMC (Note 4) | SAFETY STANDARDS | UL508, TUV EN60950-1 Approved | | |
| | WITHSTAND VOLTAGE | I/P-O/P:3KVAC I/P-FG:1.5KVAC O/P-FG:0.5KVAC | | |
| | ISOLATION RESISTANCE | I/P-O/P, I/P-FG, O/P-FG:100M Ohms/500VDC | | |
| | EMI CONDUCTION & RADIATION | Compliance to EN55011,EN55022 (CISPR22) Class B | | |
| | HARMONIC CURRENT | Compliance to EN61000-3-2,-3 | | |
| | EMS IMMUNITY | Compliance to EN61000-4-2,3,4,5,6,8,11, ENV50204, EN55024, EN61000-6-2 (EN50082-2) Heavy industry level, criteria A | | |
| OTHERS | MTBF | 123.1K hrs min. MIL-HDBK-217F (25℃) | | |
| | DIMENSION | 55.5*125.2*100mm (W*H*D) | | |
| | PACKING | 0.6Kg; 20pcs/13Kg/1.1CUFT | | |
| NOTE | 1. All parameters NOT specially mentioned are measured at 230VAC input, rated load and 25℃ of ambient temperature.<br>2. Ripple & noise are measured at 20MHz of bandwidth by using a 12" twisted pair-wire terminated with a 0.1uf & 47uf parallel capacitor.<br>3. Tolerance : includes set up tolerance, line regulation and load regulation.<br>4. The power supply is considered a component which will be installed into a final equipment. The final equipment must be re-confirmed that it still meets EMC directives. | | | |

## ■ Mechanical Specification

Case No. 923 Unit:mm



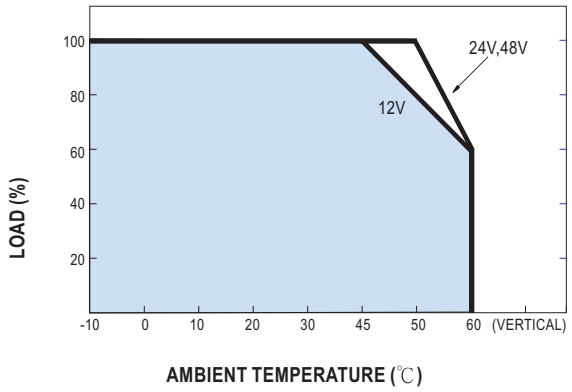

Terminal Pin. No Assignment (TB1)

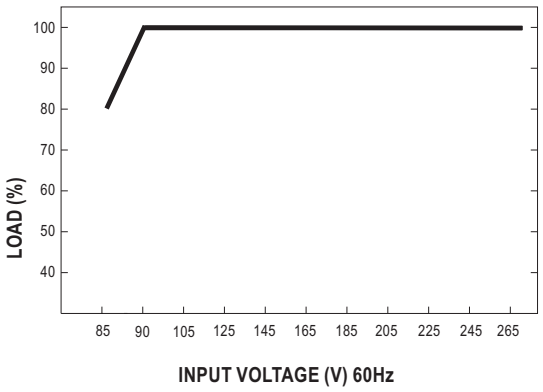
| Pin No. | Assignment |
|---|---|
| 1 | FG ⏚ |
| 2 | AC/N(DC+) |
| 3 | AC/L(DC-) |

Terminal Pin. No Assignment (TB2)

| Pin No. | Assignment |
|---|---|
| 1,2 | DC OUTPUT +V |
| 3,4 | DC OUTPUT -V |

## ■ Output Derating




## ■ Output Derating Vs Input Voltage