



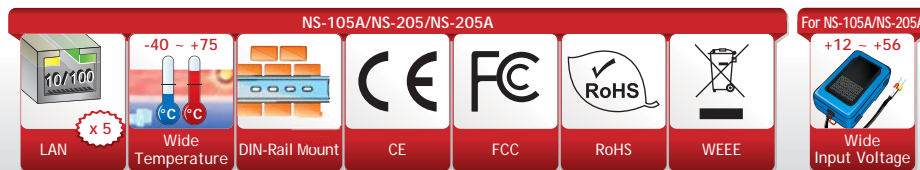


# NS-205

Unmanaged 5-port Industrial 10/100 Mbps Ethernet Switch

# NS-105A/NS-205A *NEW*

Unmanaged 5-port Industrial 10/100 Mbps Ethernet Switch



## Features ▶▶▶

- Automatic MDI/MDI-X crossover for plug-and-play
- Store-and-forward architecture
- Full duplex IEEE 802.3x and half duplex backpressure flow control
- Slim packaging fits on your DIN-Rail Mounting
- Each port supports both 10/100 Mbps speed auto negotiation
- Supports +12 V<sub>DC</sub> ~ +56 V<sub>DC</sub> for NS-105A/NS-205A
- Supports operating temperatures from -40 °C ~ +75 °C

## Introduction

The NS-205/NS-205A/NS-105A has 5 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 5 workstations and automatically switches the transmission speed (10 Mbps or 100 Mbps) for corresponding connections. The flow control mechanism is also negotiated. There is activity/link/data rate LEDs for each port to aid trouble-shooting. Port connectors are shielded RJ-45. **It contains "soft start" function with overload protection, high-low voltage protection.** The width of the NS-205/NS-205A is just 33 mm, so it can be used where space is limited.

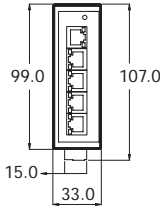
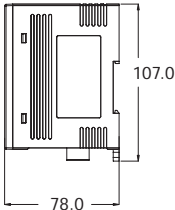
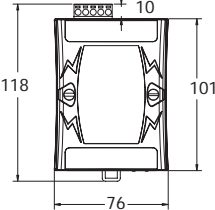
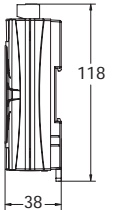
The NS-205A/NS-105A provides +12 V<sub>DC</sub> ~ +56 V<sub>DC</sub> power input to fit various power source.



## Specifications

| Models                          |               | NS-205  | NS-205A  | NS-105A                        |
|---------------------------------|---------------|---|--|--------------------------------|
| Technology                      |               |   |  |                                |
| Standards                       |               | IEEE 802.3, 802.3u, 802.3x  |  |                                |
| Processing Type                 |               | Store & forward; wire speed switching   |  |                                |
| MAC Addresses                   |               | 1024  |  |                                |
| Memory Bandwidth                |               | 1.4 Gbps  | 3.2 Gbps   |                                |
| Frame Buffer Memory             |               | 256 Kbit  | 512 Kbit   |                                |
| Flow Control                    |               | IEEE 802.3x flow control  | IEEE 802.3x flow control, back pressure flow control     |                                |
| Interface                       |               |   |  |                                |
| RJ-45 Ports                     |               | 10/100 Base-T(X) auto negotiation speed, F/H duplex mode, and auto MDI/MDI-X connection |  |                                |
| LED Indicators                  |               | Power, Link/Act, 10/100M  |  |                                |
| Ethernet Isolation              |               | 1500 V <sub>rms</sub> 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  |  |                                |
| Redundant Power                 |               |   |  |                                |
| Input Voltage Range             |               | +10 V <sub>dc</sub> ~ +30 V <sub>dc</sub> (Non-isolated)                                | +12 V <sub>dc</sub> ~ +56 V <sub>dc</sub> (Non-isolated) |                                |
| Power Consumption               |               | 0.1 A @ 24 V <sub>dc</sub>  |  |                                |
| Protection                      |               | Power reverse polarity protection   |  |                                |
| Frame Ground for EMS Protection |               | Yes   |  |                                |
| Connector                       |               | 3-Pin Removable Terminal Block  |  | 5-Pin Removable Terminal Block |
| Mechanical                      |               |   |  |                                |
| Casing                          |               | Plastic   |  |                                |
| Flammability                    |               | UL 94V-0  |  |                                |
| Dimensions (W x L x H)          |               | 33 mm x 78 mm x 107 mm  |  | 76 mm x 38 mm x 118 mm         |
| Installation                    |               | DIN-Rail Mounting   |  |                                |
| Environment                     |               |   |  |                                |
| Operating Temperature           |               | -40 °C ~ +75 °C   |  |                                |
| Storage Temperature             |               | -40 °C ~ +85 °C   |  |                                |
| Ambient Relative Humidity       |               | 10% ~ 90% RH, non-condensing  |  |                                |

## Dimensions (Units: mm)

| NS-205/NS-205A  |   | NS-105A  |   |
|---|---|--|---|
|  |  |  |  |
| Front View  | Right Side View   | Front View   | Right Side View   |

## Ordering Information

|            |   |
|------------|---|
| NS-205 CR  | Unmanaged 5-port Industrial Ethernet Switch (RoHS)  |
| NS-205A CR | Unmanaged 5-port Industrial Ethernet Switch with Power Input +12 V <sub>dc</sub> ~ +56 V <sub>dc</sub> (RoHS) |
| NS-105A CR | Unmanaged 5-port Industrial Ethernet Switch with Power Input +12 V <sub>dc</sub> ~ +56 V <sub>dc</sub> (RoHS) |

## Accessories

|                 |  |
|-----------------|--|
| GPSU06U-6 CR    | 24 V/0.25 A, 6 W Power Supply (RoHS)                         |
| GPSU06E-6 CR    | 24 V/0.25A, 6 W Power Supply with 2 pole EURO plug (RoHS)    |
| DIN-KA52F CR    | 24 V/1.04 A, 25 W Power Supply with DIN-Rail Mounting (RoHS) |
| DIN-KA52F-48 CR | 48 V/0.52 A, 25 W Power Supply with DIN-Rail Mounting (RoHS) |
| MDR-20-24 CR    | 24 V/1 A, 24 W Power Supply with DIN-Rail Mounting (RoHS)    |
| MDR-60-48 CR    | 48 V/1.25 A, 60 W Power Supply with DIN-Rail Mounting (RoHS) |



### Features ▶▶▶

- 5-port RJ-45 Ethernet Switch
- Each port supports both 10/100 Mbps speed auto negotiation
- Full duplex IEEE 802.3x and half duplex backpressure flow control
- Automatic MDI/MDI-X crossover for plug-and-play
- 3.2 Gbps high performance memory bandwidth
- 512 Kbit frame buffer memory

### Introduction

The I-8135W is a flexible and high performance five-port Ethernet switch module. It can be installed in PAC (XPAC, WinPAC, LinPAC, iPAC, ViewPAC, ...) and directly gets power from the backplane. An extra power adapter for an Ethernet switch is not need any more.

In your PAC solutions, if you want to expand Ethernet connection, I-8135W is good to replace regular Ethernet switches to save installation space and power adapter.

### Specifications

|                                  |  |
|----------------------------------|--|
| <b>Technology</b>                |  |
| <b>Standards</b>                 | IEEE 802.3, 802.3u, 802.3x   |
| <b>Processing Type</b>           | Store & forward, wire speed switching                                    |
| <b>MAC Addresses</b>             | 1024   |
| <b>Memory Bandwidth</b>          | 3.2 Gbps   |
| <b>Frame Buffer Memory</b>       | 512 Kbit   |
| <b>Flow Control</b>              | IEEE802.3x flow control, back pressure flow control                      |
| <b>Ethernet Switch</b>           | No external software required (for iP-8000, WP-8000, XP-8000, VP-23/25W) |
| <b>Interface</b>                 |  |
| <b>LED Indicators</b>            | 1 LED as power indicator; 10 LEDs as speed and Link/Act indicators       |
| <b>Redundant Power</b>           |  |
| <b>Power Consumption</b>         | 3 W  |
| <b>Mechanical</b>                |  |
| <b>Dimensions (W x H x D)</b>    | 30 mm x 82 mm x 114 mm   |
| <b>Environment</b>               |  |
| <b>Operating Temperature</b>     | -25 °C ~ +75 °C  |
| <b>Storage Temperature</b>       | -30 °C ~ +85 °C  |
| <b>Ambient Relative Humidity</b> | 5% ~ 90% RH, non-condensing  |

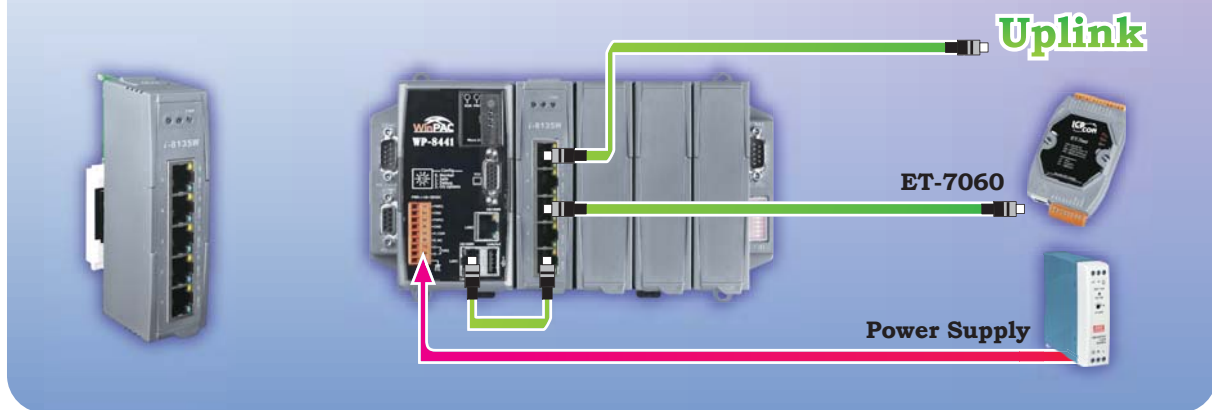


## Applications

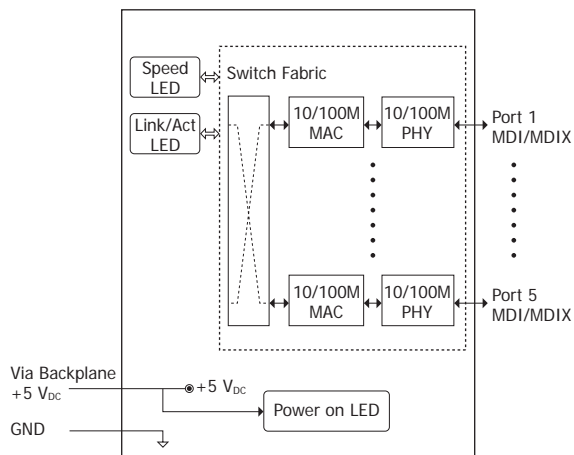
### NS-205 with PAC (For standard Ethernet Switch application)



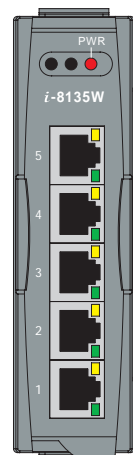
### I-8135W with PAC



## Internal I/O Structure

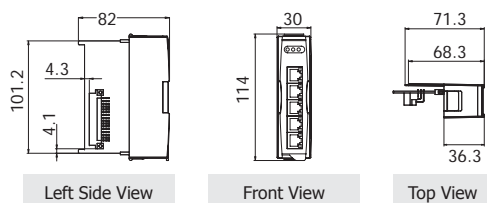


## LED Functions



| LED              | Color  | Description  |
|------------------|--------|--------------|
| PWR              | Red    | Power is ON  |
|                  | Off    | Power is Off |
| 10/100M (Port 1) | Green  | Link/Act     |
|                  | Yellow | 10/100M      |
| 10/100M (Port 2) | Green  | Link/Act     |
|                  | Yellow | 10/100M      |
| 10/100M (Port 3) | Green  | Link/Act     |
|                  | Yellow | 10/100M      |
| 10/100M (Port 4) | Green  | Link/Act     |
|                  | Yellow | 10/100M      |
| 10/100M (Port 5) | Green  | Link/Act     |
|                  | Yellow | 10/100M      |

## Dimensions (Units: mm)



## Ordering Information

|              |   |
|--------------|---|
| I-8135W-G CR | 5-port 10/100 Mbps Fast Ethernet Switch Module (RoHS) |
|--------------|---|



### Features ▶▶▶

- Cost-effective
- Automatic MDI/MDI-X crossover for plug-and-play
- Store-and-forward architecture
- Full duplex IEEE 802.3x and half duplex backpressure flow control
- Each port supports both 10/100 Mbps speed auto negotiation
- Supports +12 V<sub>DC</sub> ~ +48 V<sub>DC</sub> power input
- Supports operating temperatures from -40 °C ~ +75 °C
- DIN-Rail Mounting

### Introduction

The NS-208A/NSM-208A has 8 Ethernet ports that support 10/100 Base-TX, with a 10/100M auto negotiation feature and auto MDI/MDI-X function.

All Ethernet ports have memory buffers that support the store-and-forward mechanism, which assures that data can be transmitted properly. The NS-208A/NSM-208A supports advanced network standards to optimize network performance, reduce maintenance costs, and secure network safety.

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

### Comparison Table of 8-port 10/100 Mbps Ethernet Switch

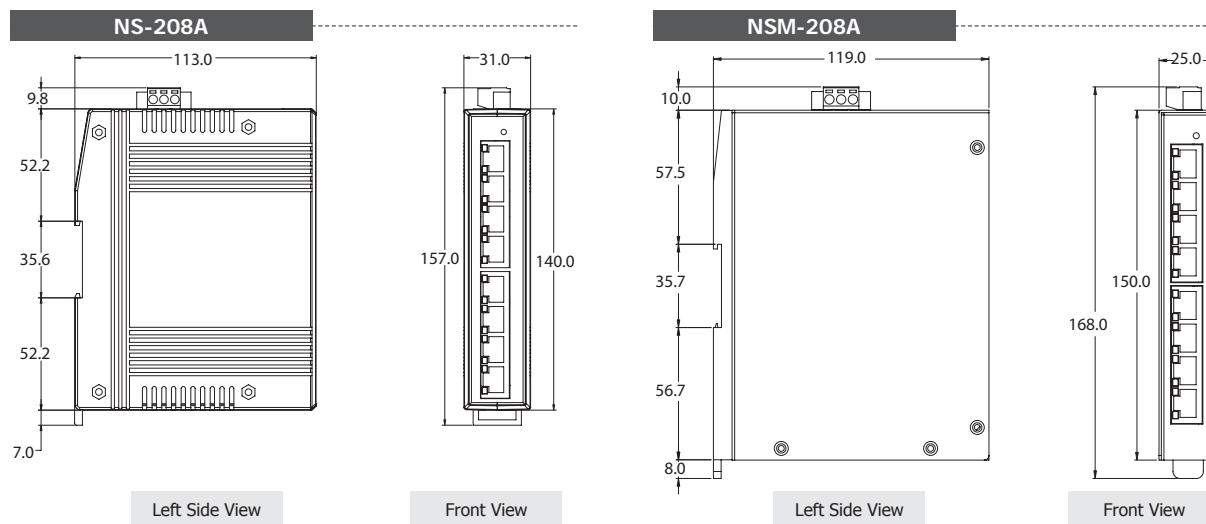
|                                   |  |  |  |  |  |
|-----------------------------------|---|---|---|---|---|
| Mode Name                         | NS-208  | NSM-108   | NS-208A   | NSM-208A  | NS-208R   |
| Input Voltage Range               | +10 V <sub>DC</sub> ~ +30 V <sub>DC</sub>   |   | +12 V <sub>DC</sub> ~ +48 V <sub>DC</sub>   |   |   |
| Casing                            | Plastic   | Metal   | Plastic   | Metal   | Plastic   |
| Installation                      | DIN-Rail Mounting   | DIN-Rail Mounting or Wall Mounting  | DIN-Rail Mounting   |   |   |
| Dimensions (W x L x H) (Unit: mm) | 64 x 98 x 118   | 73 x 102 x 132  | 31 x 113 x 157  | 25 x 119 x 168  | 64 x 98 x 118   |
| Remarks                           | -   |   | Cost-effective  |   | EN50155-certified   |



## Specifications

| Models                    | NS-208A   | NSM-208A                |
|---------------------------|---|-------------------------|
| 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-T(X) auto negotiation speed, F/H duplex mode, and auto MDI/MDI-X connection |                         |
| LED Indicators            | Power, Link/Act, 10/100M  |                         |
| Ethernet Isolation        | 1500 V <sub>rms</sub> 1 minute  |                         |
| EMS Protection            | Yes   |                         |
| Power Input               |   |                         |
| Input Voltage Range       | +12 V <sub>DC</sub> ~ +48 V <sub>DC</sub>   |                         |
| Power Consumption         | 0.2 A @ 24 V <sub>DC</sub>  |                         |
| Protection                | Power reverse polarity protection   |                         |
| EMS Protection            | Yes   |                         |
| Connector                 | 3-Pin Removable Terminal Block  |                         |
| Mechanical                |   |                         |
| Casing                    | Plastic (Flammability UL 94V-0)   | Metal (IP30 Protection) |
| Dimensions (W x L x H)    | 31 mm x 113 mm x 157 mm   | 25 mm x 119 mm x 168 mm |
| Installation              | DIN-Rail Mounting   |                         |
| Environment               |   |                         |
| Operating Temperature     | -40 °C ~ +75 °C   |                         |
| Storage Temperature       | -40 °C ~ +85 °C   |                         |
| Ambient Relative Humidity | 10% ~ 90% RH, non-condensing  |                         |

## Dimensions (Units: mm)

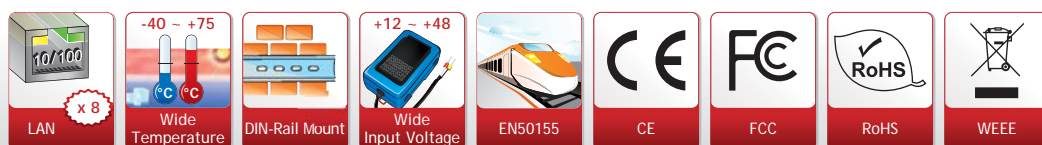


## Ordering Information

|             |  |
|-------------|--|
| NS-208A CR  | Unmanaged 8-port Industrial 10/100 Mbps Ethernet Switch (RoHS)                   |
| NSM-208A CR | Unmanaged 8-port Industrial 10/100 Mbps Ethernet Switch with Metal Casing (RoHS) |

## Accessories

|              |   |
|--------------|---|
| MDR-60-48    | 48 V/1.25 A, 60 W Power Supply with DIN-Rail Mounting |
| DIN-KA52F-48 | 48 V/0.52 A, 25 W Power Supply with DIN-Rail Mounting |
| KA52F-48     | 48 V/0.52 A, 25 W Power Supply                        |



### Features ▶▶▶▶

- EN50155-certified for harsh railway standards
- Automatic MDI/MDI-X crossover for plug-and-play
- Store-and-forward architecture
- Full duplex IEEE 802.3x and half duplex backpressure flow control
- Each port supports both 10/100 Mbps speed auto negotiation
- Supports +12 V<sub>DC</sub> ~ +48 V<sub>DC</sub> power input
- Supports operating temperatures from -40 °C ~ +75 °C
- DIN-Rail Mounting

### Introduction

NS-208R Ethernet switch is designed for industrial applications, such as rolling stock, vehicle, and railway applications. The NS-208R is an unmanaged Ethernet switch with 8 x 10/100 Base-T(X) ports which is compliant with EN50155 request.

NS-208R provides a wide +12 V<sub>DC</sub> ~ +48 V<sub>DC</sub> power range to fit all the common power standards found in industrial automation, without external power converters. The wide power input lowers installation and maintenance costs.

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

### Comparison Table of 8-port 10/100 Mbps Ethernet Switch

| Mode Name                         | NS-208                                    | NSM-108                            | NS-208A                                   | NSM-208A          | NS-208R           |
|-----------------------------------|---|------------------------------------|---|-------------------|-------------------|
| Input Voltage Range               | +10 V <sub>DC</sub> ~ +30 V <sub>DC</sub> |                                    | +12 V <sub>DC</sub> ~ +48 V <sub>DC</sub> |                   |                   |
| Casing                            | Plastic                                   | Metal                              | Plastic                                   | Metal             | Plastic           |
| Installation                      | DIN-Rail Mounting                         | DIN-Rail Mounting or Wall Mounting |   | DIN-Rail Mounting |                   |
| Dimensions (W x L x H) (Unit: mm) | 64 x 98 x 118                             | 73 x 102 x 132                     | 31 x 113 x 157                            | 25 x 119 x 168    | 64 x 98 x 118     |
| Remarks                           | —   |                                    | Cost-effective                            |                   | EN50155-certified |



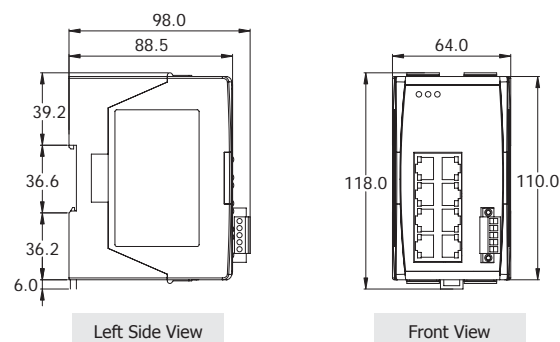
## Specifications

|                                  |   |
|----------------------------------|---|
| <b>Technology</b>                |   |
| <b>Standards</b>                 | IEEE 802.3, 802.3u, 802.3x  |
| <b>Processing Type</b>           | Store & forward; wire speed switching   |
| <b>MAC Addresses</b>             | 2048  |
| <b>Memory Bandwidth</b>          | 3.2 Gbps  |
| <b>Frame Buffer Memory</b>       | 512 Kbit  |
| <b>Flow Control</b>              | IEEE 802.3x flow control, back pressure flow control                                    |
| <b>Interface</b>                 |   |
| <b>RJ-45 Ports</b>               | 10/100 Base-T(X) auto negotiation speed, F/H duplex mode, and auto MDI/MDI-X connection |
| <b>LED Indicators</b>            | Power, Link/Act, 10/100M  |
| <b>Ethernet Isolation</b>        | 1500 V <sub>rms</sub> 1 minute  |
| <b>EMS Protection</b>            | Yes   |
| <b>Power Input</b>               |   |
| <b>Input Voltage Range</b>       | +12 V <sub>DC</sub> ~ +48 V <sub>DC</sub>   |
| <b>Power Consumption</b>         | 0.15 A @ 24 V <sub>DC</sub>   |
| <b>Protection</b>                | Power reverse polarity protection   |
| <b>EMS Protection</b>            | Yes   |
| <b>Connector</b>                 | 5-Pin Removable Terminal Block  |
| <b>Mechanical</b>                |   |
| <b>Casing</b>                    | Plastic (Flammability UL 94V-0)   |
| <b>Dimensions (W x L x H)</b>    | 64 mm x 98 mm x 118 mm  |
| <b>Installation</b>              | DIN-Rail Mounting   |
| <b>Environment</b>               |   |
| <b>Operating Temperature</b>     | -40 °C ~ +75 °C   |
| <b>Storage Temperature</b>       | -40 °C ~ +85 °C   |
| <b>Ambient Relative Humidity</b> | 10% ~ 90% RH, non-condensing  |

## Applications



## Dimensions (Units: mm)



## Ordering Information

|            |  |
|------------|--|
| NS-208R CR | Unmanaged EN50155 8-port Industrial 10/100 Mbps Ethernet Switch (RoHS) |
|------------|--|

## Accessories

|              |   |
|--------------|---|
| MDR-60-48    | 48 V/1.25 A, 60 W Power Supply with DIN-Rail Mounting |
| DIN-KA52F-48 | 48 V/0.52 A, 25 W Power Supply with DIN-Rail Mounting |
| KA52F-48     | 48 V/0.52 A, 25 W Power Supply                        |

# NS-205G

Unmanaged 5-port Industrial 10/100/1000 Base-T Ethernet Switch

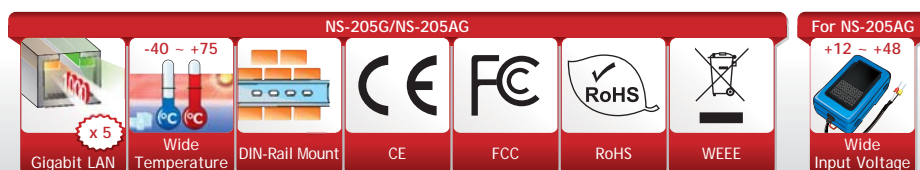
# NS-205AG *Available soon*

NS-205G with +48 V<sub>DC</sub> Input

NS-205G



NS-205AG



## Features ▶▶▶

- Automatic MDI/MDI-X crossover for plug-and-play
- Each port supports 10/100 and 1000 Mbps speed auto negotiation
- Full duplex IEEE 802.3x and half duplex backpressure flow control
- Supports operating temperatures from -40 °C ~ +75 °C
- 10 Gbps high performance memory bandwidth
- Power saving technology
- Supports +12 V<sub>DC</sub> ~ +48 V<sub>DC</sub> power input (NS-205AG)
- Store-and-forward architecture
- Slim packaging fits on your DIN-Rail Mounting

## Introduction

The NS-205G/NS-205AG is 5-port unmanaged gigabit switches that support 10/100/1000 Base-T, with a 10/100/1000M auto negotiation feature and auto MDI/MDI-X function. It can connect 5 workstations and automatically switches the transmission speed (10 Mbps or 100 Mbps or 1000 Mbps) for corresponding connections.

That is an ideal solution for bandwidth-hungry applications (such as high resolution digital image transmission, video/audio file streaming/downloading, and server farm connectivity).

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

Power Savings by Number of Connected Ports and Link Status: Computers do not require Internet access all the time; neither do switches utilize all ports at all times. When a computer or network equipment is shutdown, switches often remain on and continue to consume considerable amount of power. With Green Ethernet technology, NS-205G/NS-205AG can automatically detect link status and reduce power usage of ports that are idle. Computers or any connecting parties set to standby mode (not power off), however, will not provide significant power savings.

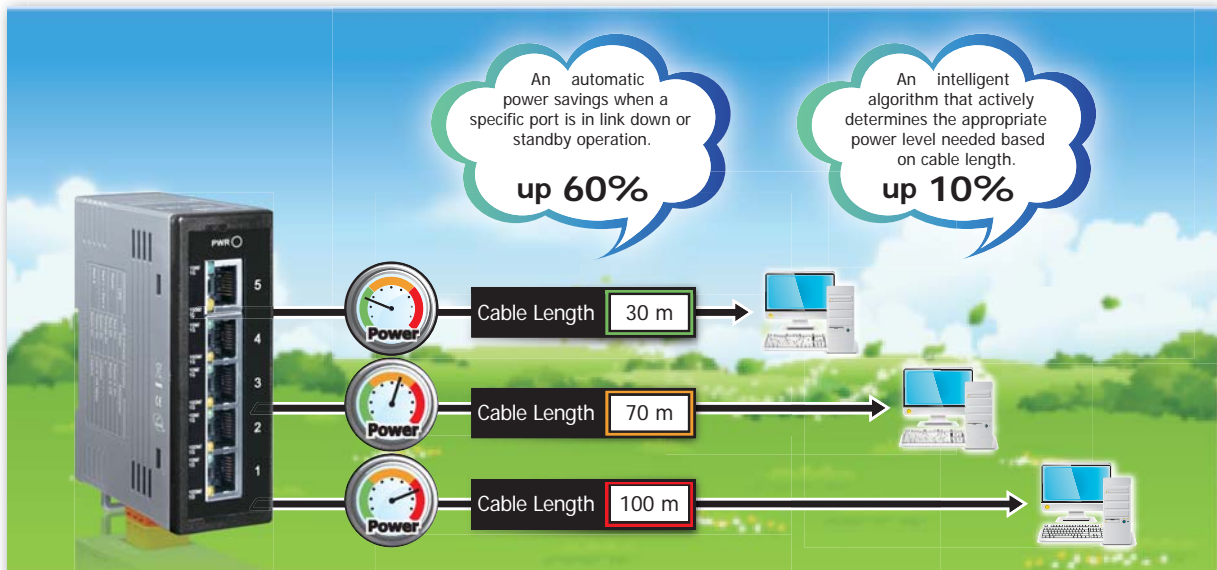
## Specifications

| Models              | NS-205G  | NS-205AG |
|---------------------|--|----------|
| Technology          |  |          |
| Standards           | IEEE 802.3, 802.3u, 802.3ab and 802.3x               |          |
| Processing Type     | Store & forward, wire speed switching                |          |
| MAC Addresses       | 8192   |          |
| Memory Bandwidth    | 10 Gbps  |          |
| Frame Buffer Memory | 1 Mbit   |          |
| Jumbo Frames        | 9K for Speed 1000M                                   |          |
| Flow Control        | IEEE 802.3x flow control, back pressure flow control |          |

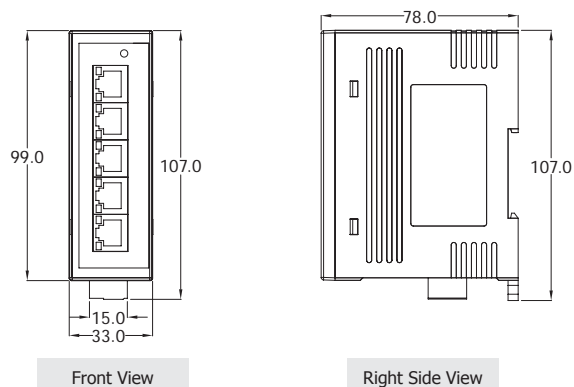


| Models                          |                  | NS-205G   | NS-205AG   |
|---------------------------------|------------------|---|--|
| Interface                       |                  |   |  |
| RJ-45 Ports                     |                  | 10/100/1000 Base-T auto negotiation speed, F/H duplex mode, and auto MDI/MDI-X connection |  |
| LED Indicators                  |                  | Power, 10/100/1000M, Link/Act   |  |
| Ethernet Isolation              |                  | 1500 V <sub>rms</sub> 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  |  |
|                                 | Gigabit Ethernet | 4-pair UTP/STP Cat.5, EIA/TIA-568 100 Ω   |  |
| Power                           |                  |   |  |
| Input Voltage Range             |                  | +10 V <sub>DC</sub> ~ +30 V <sub>DC</sub> (Non-isolated)                                  | +12 V <sub>DC</sub> ~ +48 V <sub>DC</sub> (Non-isolated) |
| Power Consumption               |                  | 0.1 A @ 24 V <sub>DC</sub>  |  |
| Protection                      |                  | Power reverse polarity protection   |  |
| Frame Ground for EMS Protection |                  | Yes   |  |
| Connector                       |                  | 3-Pin Removable Terminal Block  |  |
| Mechanical                      |                  |   |  |
| Casing                          |                  | Plastic (Flammability UL 94V-0)   |  |
| Flammability                    |                  | UL 94V-0  |  |
| Dimensions (W x L x H)          |                  | 33 mm x 78 mm x 107 mm  |  |
| Installation                    |                  | DIN-Rail Mounting   |  |
| Environment                     |                  |   |  |
| Operating Temperature           |                  | -40 °C ~ +75 °C   |  |
| Storage Temperature             |                  | -40 °C ~ +85 °C   |  |
| Ambient Relative Humidity       |                  | 10% ~ 90% RH, non-condensing  |  |

### Power Saving Application



### Dimensions (Units: mm)



### Ordering Information

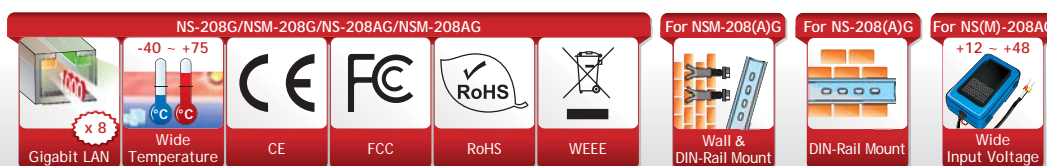
|             |   |
|-------------|---|
| NS-205G CR  | Unmanaged 5-port Industrial 10/100/1000 Base-T Ethernet Switch (RoHS) |
| NS-205AG CR | NS-205G with +48 V <sub>dc</sub> Input (RoHS)                         |

### Accessories

|              |  |
|--------------|--|
| GPSU06U-6 CR | 24 V/0.25 A, 6 W Power Supply (RoHS)                         |
| DIN-KA52F CR | 24 V/1.04 A, 25 W Power Supply with DIN-Rail Mounting (RoHS) |

NS-208G/NS-208AG

NSM-208G/NSM-208AG



### Features ▶▶▶

- Automatic MDI/MDI-X crossover for plug-and-play
- Store-and-forward architecture
- Full duplex IEEE 802.3x and half duplex backpressure flow control
- Supports +12 V<sub>DC</sub> ~ +48 V<sub>DC</sub> power input for NS-208AG and NSM-208AG
- Each port supports 10/100 and 1000 Mbps speed auto negotiation
- 16 Gbps high performance memory bandwidth
- Supports 9K Jumbo Frames for Speed 1000M
- Supports operating temperatures from -40 °C ~ +75 °C
- DIN-Rail Mounting

### Introduction

The NS-208G/NSM-208G has 8 Ethernet Switching ports that support 10/100/1000 Base-T, with a 10/100/1000M 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 or 1000 Mbps) for corresponding connections.

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

NS-208AG/NSM-208AG is exactly the same as NS-208G/NSM-208G except for the power input.

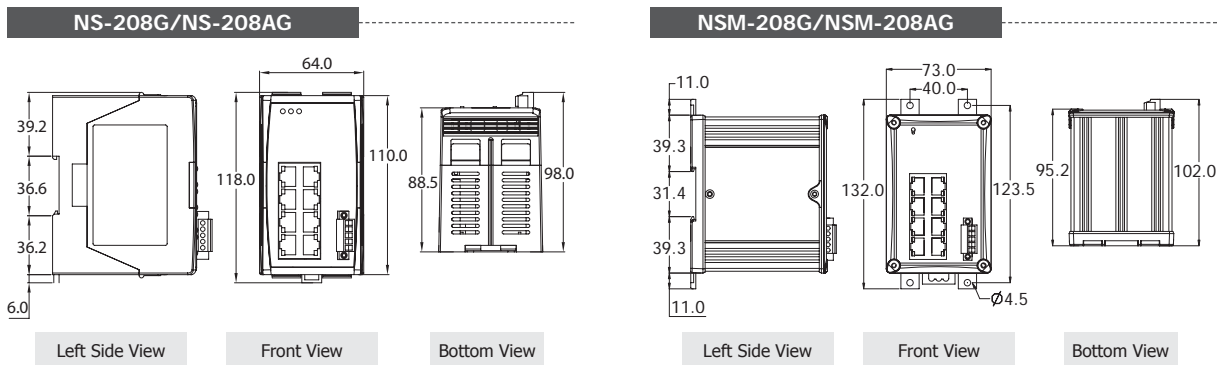
### Specifications

| Models              | NS-208G  | NS-208AG | NSM-208G | NSM-208AG |
|---------------------|--|----------|----------|-----------|
| Technology          |  |          |          |           |
| Standards           | IEEE 802.3, 802.3u, 802.3x                           |          |          |           |
| Processing Type     | Store & forward; wire speed switching                |          |          |           |
| MAC Addresses       | 8192   |          |          |           |
| Memory Bandwidth    | 16 Gbps  |          |          |           |
| Frame Buffer Memory | 1 Mbit   |          |          |           |
| Jumbo Frames        | 9K for Speed 1000M                                   |          |          |           |
| Flow Control        | IEEE 802.3x flow control, back pressure flow control |          |          |           |



| Models                    |                  | NS-208G   | NS-208AG                                  | NSM-208G                                  | NSM-208AG                                 |
|---------------------------|------------------|---|---|---|---|
| Interface                 |                  |   |   |   |   |
| RJ-45 Ports               |                  | 10/100 Base-T(X) auto negotiation speed, F/H duplex mode, and auto MDI/MDI-X connection |   |   |   |
| LED Indicators            |                  | Power, 10/100/1000M, Link/Act   |   |   |   |
| Ethernet Isolation        |                  | 1500 V <sub>rms</sub> 1 minute  |   |   |   |
| 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  |   |   |   |
|                           | Gigabit Ethernet | 4-pair UTP/STP Cat.5, EIA/TIA-568 100 Ω   |   |   |   |
| Power Input               |                  |   |   |   |   |
| Input Voltage Range       |                  | +10 V <sub>DC</sub> ~ +30 V <sub>DC</sub>   | +12 V <sub>DC</sub> ~ +48 V <sub>DC</sub> | +10 V <sub>DC</sub> ~ +30 V <sub>DC</sub> | +12 V <sub>DC</sub> ~ +48 V <sub>DC</sub> |
| Power Consumption         |                  | 0.3 A @ 24 V <sub>DC</sub>  |   |   |   |
| Protection                |                  | Power reverse polarity protection   |   |   |   |
| EMS Protection            |                  | Yes   |   |   |   |
| Connector                 |                  | 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 119 mm  |   | 73 mm x 102 mm x 132 mm                   |   |
| Installation              |                  | DIN-Rail Mounting   |   | DIN-Rail Mounting or Wall Mounting        |   |
| Environment               |                  |   |   |   |   |
| Operating Temperature     |                  | -40 °C ~ +75 °C   |   |   |   |
| Storage Temperature       |                  | -40 °C ~ +75 °C   |   |   |   |
| Ambient Relative Humidity |                  | 10% ~ 90% RH, non-condensing  |   |   |   |

### Dimensions (Units: mm)



### Ordering Information

|              |  |
|--------------|--|
| NS-208G CR   | Unmanaged 8-port 10/100/1000 Base-T Ethernet Switch with Power Input +10 V <sub>DC</sub> ~ +30 V <sub>DC</sub> (RoHS)                |
| NSM-208G CR  | Unmanaged 8-port 10/100/1000 Base-T Ethernet Switch with Power Input +10 V <sub>DC</sub> ~ +30 V <sub>DC</sub> , metal casing (RoHS) |
| NS-208AG CR  | Unmanaged 8-port 10/100/1000 Base-T Ethernet Switch with Power Input +12 V <sub>DC</sub> ~ +48 V <sub>DC</sub> (RoHS)                |
| NSM-208AG CR | Unmanaged 8-port 10/100/1000 Base-T Ethernet Switch with Power Input +12 V <sub>DC</sub> ~ +48 V <sub>DC</sub> , metal casing (RoHS) |

### Accessories

|              |  |
|--------------|--|
| DIN-KA52F    | 24 V/1.04 A, 25 W Power Supply with DIN-Rail Mounting    |
| DIN-KA52F-48 | 48 V/0.52 A, 25 W Power Supply with DIN-Rail Mounting    |
| KA52F-48     | 48 V/0.52 A, 25 W Power Supply without DIN-Rail Mounting |
| MDR-20-24    | 24 V/1 A, 24 W Power Supply with DIN-Rail Mounting       |
| MDR-60-48    | 48 V/1.25 A, 60 W Power Supply with DIN-Rail Mounting    |



### Features ▶▶▶

- Provides 16 10/100 Mbps Ethernet ports
- Each port supports both 10/100 Mbps speed auto negotiation
- Supports 4 kV Ethernet ESD protection and 1 kV EFT protection
- Supports operating temperatures from -40 °C ~ +75 °C
- DIN-Rail Mounting, Wall Mounting
- Automatic MDI/MDI-X crossover for plug-and-play
- Store-and-forward architecture
- Full duplex IEEE 802.3x and half duplex backpressure flow control
- Supports Dual +12 V<sub>DC</sub> ~ +48 V<sub>DC</sub> power input and 1 relay output

### Introduction

The NSM-216 has 16 Ethernet ports that support 10/100 Base-TX, with a 10/100M auto negotiation feature and auto MDI/MDI-X function. It can connect 16 workstations and automatically switches the transmission speed (10 Mbps or 100 Mbps) for corresponding connections.

All Ethernet ports have memory buffers that support the store-and-forward mechanism, which assures that data can be transmitted properly. The NSM-216 supports advanced network standards to optimize network performance, reduce maintenance costs, and secure network safety.

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

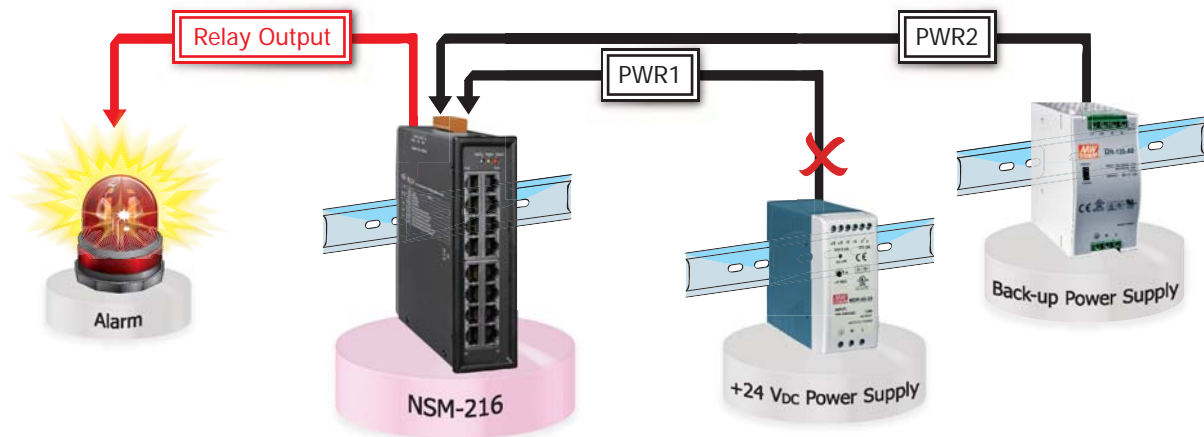
### Specifications

| Technology          |  |
|---------------------|--|
| Standards           | IEEE802.3, 802.3u, 802.3x                            |
| Processing Type     | Store & forward, wire speed switching                |
| MAC Addresses       | 8K   |
| Memory Bandwidth    | 3.2 Gbps   |
| Frame Buffer Memory | 3 Mbit   |
| Flow Control        | IEEE 802.3x flow control, back pressure flow control |

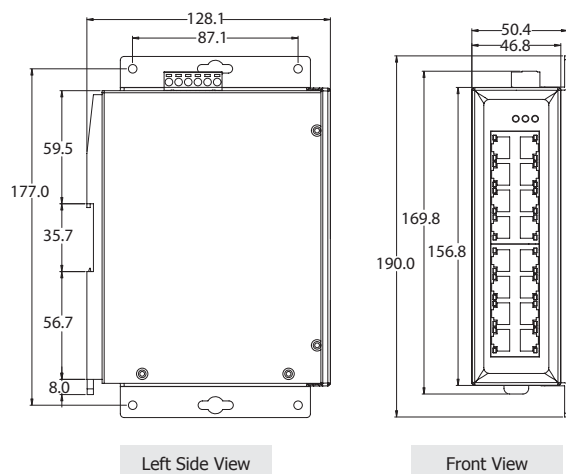
| Interface                 |   |
|---------------------------|---|
| RJ-45 Ports               | 10/100 Base-TX auto negotiation speed, F/H duplex mode, and auto MDI/MDI-X connection |
| LED Indicators            | PWR1, PWR2, Power fail, 10/100M, Link/Act   |
| Ethernet Isolation        | 1500 V <sub>rms</sub> 1 minute  |
| Power                     |   |
| Redundant Input Range     | +12 V <sub>dc</sub> ~ +48 V <sub>dc</sub> (Non-isolated)                              |
| Power Consumption         | 0.6 A @ 24 V <sub>dc</sub>  |
| Alarm Contact             | One relay output with current carrying capacity of 1A @ 30 V <sub>dc</sub>            |
| Protection                | Power reverse polarity protection   |
| Connector                 | 6-Pin Removable Terminal Block (Power & Relay)  |
| Mechanical                |   |
| Casing                    | Metal (IP30 Protection)   |
| Dimensions (W x L x H)    | 47 mm x 128 mm x 160 mm   |
| Installation              | DIN-Rail Mounting or Wall Mounting  |
| Environmental             |   |
| Operating Temperature     | -40 °C ~ +75 °C   |
| Storage Temperature       | -40 °C ~ +85 °C   |
| Ambient Relative Humidity | 10 ~ 90% RH, non-condensing   |

### Redundant Power Input

Both power inputs can be connected simultaneously to live DC power sources. If one power source fails, the other live source will act as a backup, and automatically supplies all of NSM-216 series power needs.



### Dimensions (Units: mm)



### Ordering Information

|            |  |
|------------|--|
| NSM-216 CR | Unmanaged 16-port Industrial 10/100 Base-TX Ethernet Switch with metal casing (RoHS) |
|------------|--|

### Accessories

|              |   |
|--------------|---|
| MDR-20-24    | 24 V/1 A, 24 W Power Supply with DIN-Rail Mounting    |
| DIN-KA52F    | 24 V/1.04 A, 25 W Power Supply with DIN-Rail Mounting |
| DIN-KA52F-48 | 48 V/0.52 A, 25 W Power Supply with DIN-Rail Mounting |

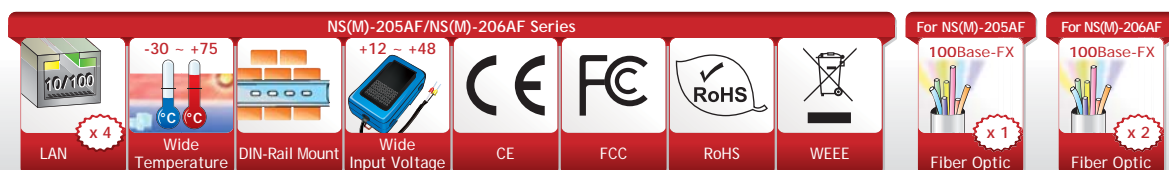


NS-205AFC-T/FCS-T/FCS-60T

NS-206AFT-T

NSM-205AFC-T/FCS-T/FCS-60T

NSM-206AFT-T



## Features ▶▶▶

- Provides 1 x 100-FX fiber port for NS-205AF/NSM-205AF series
- Provides 2 x 100-FX fiber ports for NS-206AF/NSM-206AF series
- Full duplex IEEE 802.3x and half duplex backpressure flow control
- Supports operating temperatures from -30 °C ~ +75 °C
- Automatic MDI/MDI-X crossover for plug-and-play
- Store-and-forward architecture
- Redundant dual +12 V<sub>DC</sub> ~ +48 V<sub>DC</sub> power inputs
- DIN-Rail Mounting

## Introduction

The NS-206AF/NSM-206AF is a 4-port unmanaged Ethernet with 2 fiber ports switch. Using fiber optics, you can prevent noise from interfering with your system and supports high-speed (100 Mbps) and high-distance (up to 60 km) transmissions.

The NS-205AF/NSM-205AF/NS-206AF/NSM-206AF provides a wide +12 V<sub>DC</sub> ~ +48 V<sub>DC</sub> power range to fit all the common power standards found in industrial automation, without external power converters. The wide power input lowers installation and maintenance costs.

## Comparison Table of Fiber Switch

| Mode Name                            | NS-205F<br>NS-206F                        | NSM-205F<br>NSM-206F               | NS-205AF<br>NS-206AF                      | NSM-205AF<br>NSM-206AF |
|--------------------------------------|---|------------------------------------|---|------------------------|
| PoE                                  | —   |                                    |   |                        |
| Input Voltage Range                  | +10 V <sub>DC</sub> ~ +30 V <sub>DC</sub> |                                    | +12 V <sub>DC</sub> ~ +48 V <sub>DC</sub> |                        |
| Operating Temperature                | 0 °C ~ +70 °C                             |                                    | -30 °C ~ +75 °C                           |                        |
| Casing                               | Plastic                                   | Metal (IP20)                       | Plastic                                   | Metal (IP30)           |
| Installation                         | DIN-Rail Mounting                         | DIN-Rail Mounting or Wall Mounting | DIN-Rail Mounting                         |                        |
| Dimensions (W x L x H)<br>(Unit: mm) | 64 x 98 x 110                             | 73 x 102 x 110                     | 31 x 127 x 157                            | 25 x 133 x 168         |

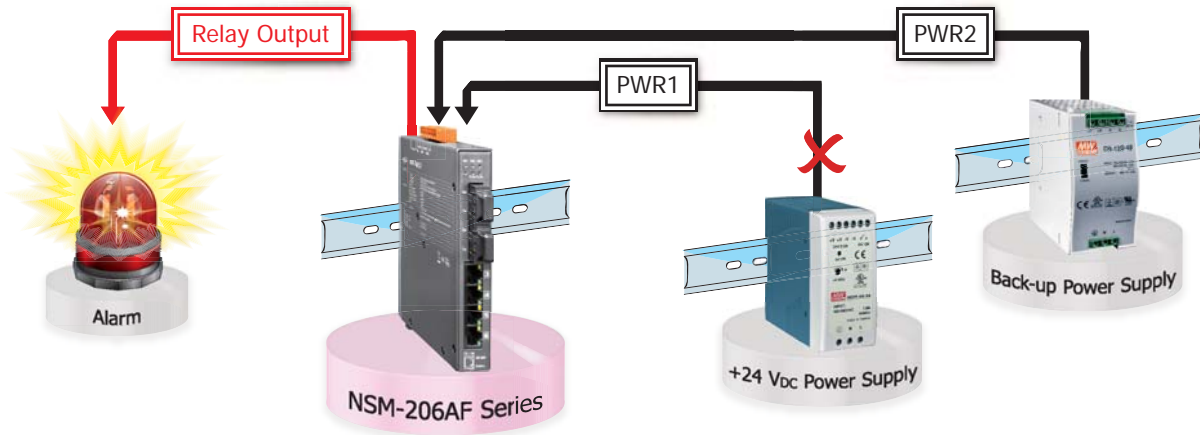
## Specifications

| Models                                    |               | NS-205AF Series   | NS-206AF Series             | NSM-205AF Series            | NSM-206AF Series            |                 |   |  |  |  |
|---|---------------|---|-----------------------------|-----------------------------|-----------------------------|-----------------|---|--|--|--|
| Technology                                |               |   |                             |                             |                             |                 |   |  |  |  |
| Standards                                 |               | IEEE 802.3, 802.3u, 802.3x  |                             |                             |                             |                 |   |  |  |  |
| Processing Type                           |               | Store & forward; wire speed switching   |                             |                             |                             |                 |   |  |  |  |
| MAC Addresses                             |               | 1024  |                             |                             |                             |                 |   |  |  |  |
| Memory Bandwidth                          |               | 2.0 Gbps  |                             |                             |                             |                 |   |  |  |  |
| Frame Buffer Memory                       |               | 512 Kbit  |                             |                             |                             |                 |   |  |  |  |
| Flow Control                              |               | IEEE 802.3x flow control  |                             |                             |                             |                 |   |  |  |  |
| Ethernet Interface                        |               |   |                             |                             |                             |                 |   |  |  |  |
| RJ-45 Ports                               |               | 10/100 Base-T(X) auto negotiation speed, F/H duplex mode, and auto MDI/MDI-X connection   |                             |                             |                             |                 |   |  |  |  |
| LED Indicators                            |               | Power, Link/Act, 10/100M  |                             |                             |                             |                 |   |  |  |  |
| Ethernet Isolation                        |               | 1500 V <sub>rms</sub> 1 minute  |                             |                             |                             |                 |   |  |  |  |
| +/-4 kV ESD Protection                    |               | Yes   |                             |                             |                             |                 |   |  |  |  |
| Fiber Interface (100 Base-FX; SC/ST type) |               |   |                             |                             |                             |                 |   |  |  |  |
| Multi-Mode                                | NS-205AFT-T   | Multi mode fiber cables: 50/125, 62.5/125 or 100/140 μm<br>Distance: 2 km, (62.5/125 μm recommended) for full duplex<br>Wavelength: 1300 or 1310 nm<br>Min. TX Output: -20 dBm<br>Max. TX Output: -14 dBm<br>Max. RX Sensitivity: -32 dBm<br>Min. RX Overload: -8 dBm<br>Budget: 12 dBm     |                             |                             |                             |                 |   |  |  |  |
|   | NS-205AFC-T   |   |                             |                             |                             |                 |   |  |  |  |
|   | NSM-205AFT-T  |   |                             |                             |                             |                 |   |  |  |  |
|   | NSM-205AFC-T  |   |                             |                             |                             |                 |   |  |  |  |
|   | NS-206AFT-T   |   |                             |                             |                             |                 |   |  |  |  |
|   | NS-206AFC-T   |   |                             |                             |                             |                 |   |  |  |  |
|   | NSM-206AFT-T  |   |                             |                             |                             |                 |   |  |  |  |
|   | NSM-206AFC-T  |   |                             |                             |                             |                 |   |  |  |  |
| Single-Mode                               | NS-205AFCS-T  | Single-mode fiber cables: 8.3/125, 8.7/125, 9/125 or 10/125 μm<br>Distance: 30 km, (9/125 μm recommended) for full duplex<br>Wavelength: 1300 or 1310 nm<br>Min. TX Output: -15 dBm<br>Max. TX Output: -8 dBm<br>Max. RX Sensitivity: -34 dBm<br>Min. RX Overload: -5 dBm<br>Budget: 19 dBm |                             |                             |                             |                 |   |  |  |  |
|   | NSM-205AFCS-T |   |                             |                             |                             |                 |   |  |  |  |
|   | NS-206AFCS-T  |   |                             |                             |                             |                 |   |  |  |  |
|   | NSM-206AFCS-T |   |                             |                             |                             |                 |   |  |  |  |
|   | Single-Mode   |   |                             |                             |                             | NS-205AFCS-60T  | Single-mode fiber cables: 8.3/125, 8.7/125, 9/125 or 10/125 μm<br>Distance: 60 km, (9/125 μm recommended) for full duplex<br>Wavelength: 1300 or 1310 nm<br>Min. TX Output: -5 dBm<br>Max. TX Output: 0 dBm<br>Max. RX Sensitivity: -35 dBm<br>Min. RX Overload: -5 dBm<br>Budget: 30 dBm |  |  |  |
|   |               |   |                             |                             |                             | NSM-205AFCS-60T |   |  |  |  |
| NS-206AFCS-60T                            |               |   |                             |                             |                             |                 |   |  |  |  |
| NSM-206AFCS-60T                           |               |   |                             |                             |                             |                 |   |  |  |  |
|   |               |   |                             |                             |                             |                 |   |  |  |  |
| Power Input                               |               |   |                             |                             |                             |                 |   |  |  |  |
| Input Voltage Range                       |               | +12 V <sub>DC</sub> ~ +48 V <sub>DC</sub> (Redundant input)   |                             |                             |                             |                 |   |  |  |  |
| Power Consumption                         |               | 0.12 A @ 24 V <sub>DC</sub>   | 0.14 A @ 24 V <sub>DC</sub> | 0.12 A @ 24 V <sub>DC</sub> | 0.14 A @ 24 V <sub>DC</sub> |                 |   |  |  |  |
| Protection                                |               | Power reverse polarity protection   |                             |                             |                             |                 |   |  |  |  |
| +/-4 kV ESD Protection                    |               | Yes   |                             |                             |                             |                 |   |  |  |  |
| Connector                                 |               | 6-Pin Removable Terminal Block  |                             |                             |                             |                 |   |  |  |  |
| Mechanical                                |               |   |                             |                             |                             |                 |   |  |  |  |
| Casing                                    |               | Plastic (Flammability UL 94V-0)   |                             | Metal (IP30 Protection)     |                             |                 |   |  |  |  |
| Dimensions (W x L x H)                    |               | 31 mm x 127 mm x 157 mm   |                             | 25 mm x 133 mm x 168 mm     |                             |                 |   |  |  |  |
| Installation                              |               | DIN-Rail Mounting   |                             |                             |                             |                 |   |  |  |  |
| Environmental                             |               |   |                             |                             |                             |                 |   |  |  |  |
| Operating Temperature                     |               | -30 °C ~ +75 °C   |                             |                             |                             |                 |   |  |  |  |
| Storage Temperature                       |               | -40 °C ~ +85 °C   |                             |                             |                             |                 |   |  |  |  |
| Ambient Relative Humidity                 |               | 10% ~ 90% RH, non-condensing  |                             |                             |                             |                 |   |  |  |  |

## Redundant Power Input

Both power inputs can be connected simultaneously to live DC power sources.

If one power source fails, the other live source will act as a backup, and automatically supplies all of NSM-205AF/NSM-206AF series power needs.



## Pin Functions for Power Input

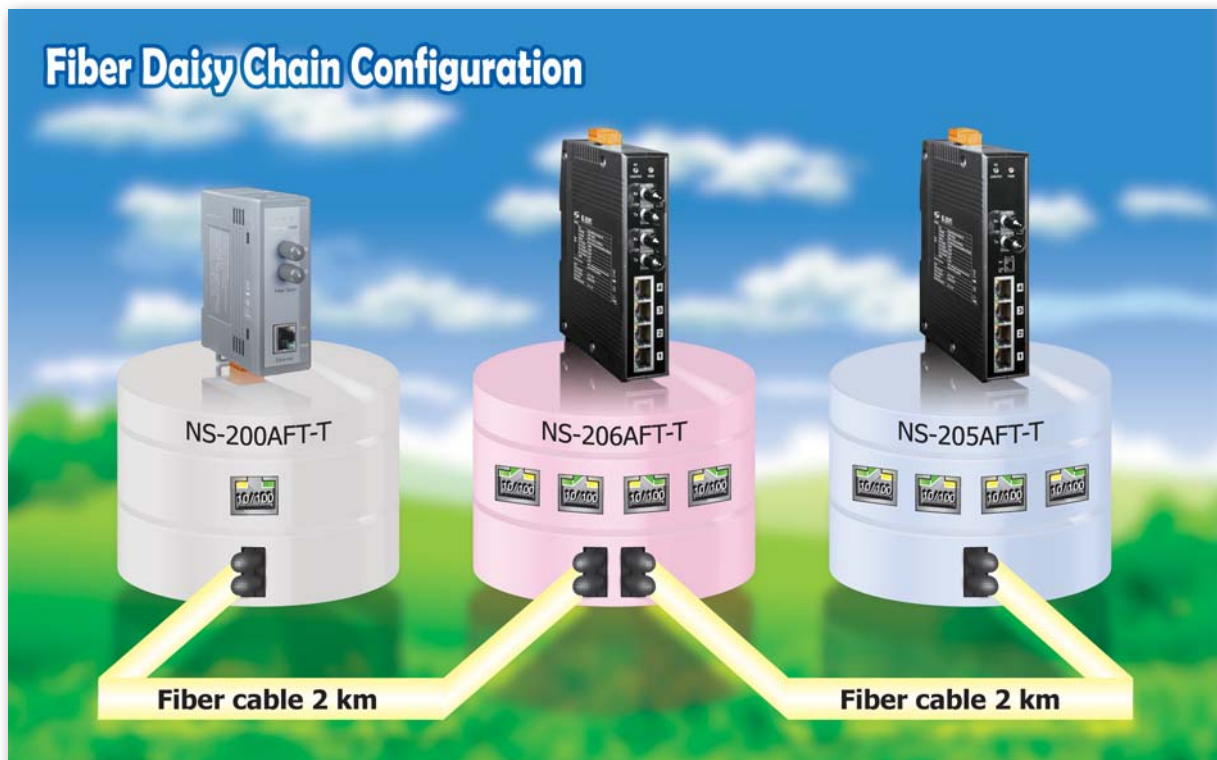
External power supply is connected using the removable terminal block:

PWR: Power input and should be connected to the power supply (+)

GND: Ground and should be connected to the power supply (-)

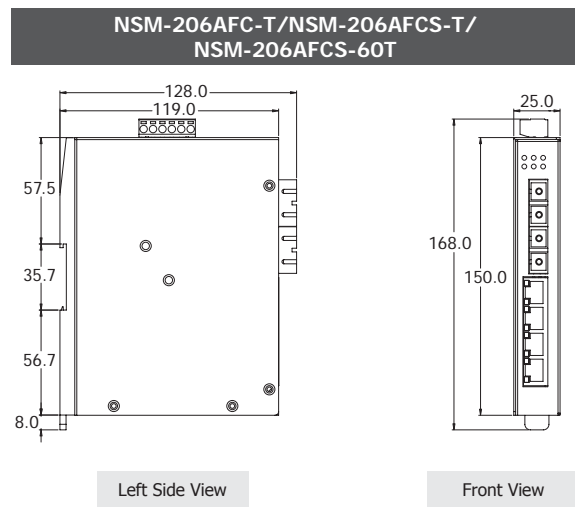
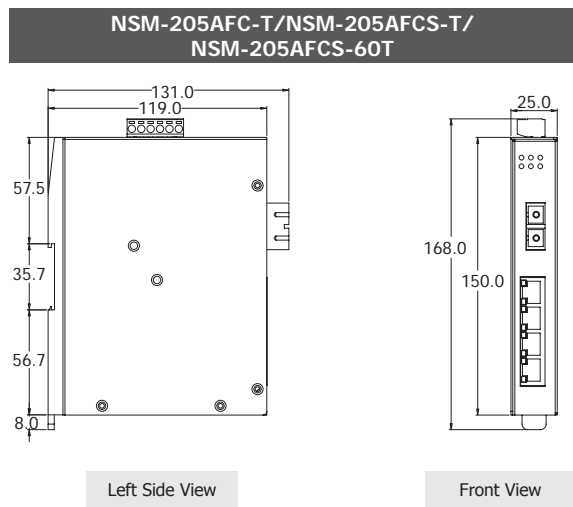
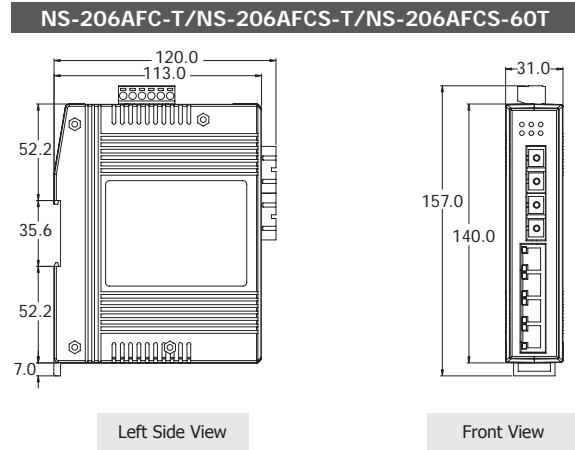
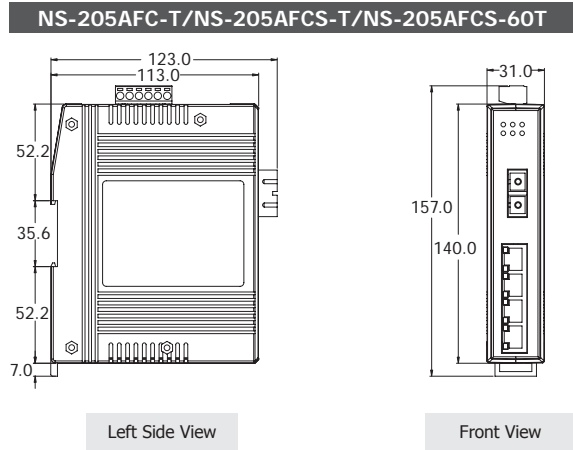
F.G. : F.G. stands for Frame Ground (protective ground). It is optional. If you use this pin, it can reduce EMI radiation; improve EMI performance and ESD protection.

## Applications





## Dimensions (Units: mm)

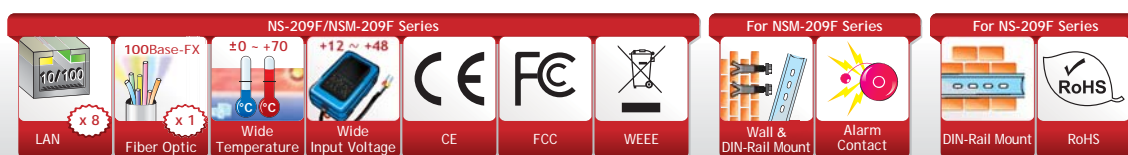


## Ordering Information

|                    |  |
|--------------------|--|
| NS-205AFT-T CR     | Multi-mode, ST Connector, 4-port 10/100 Mbps with 1 Fiber port Switch (RoHS)                     |
| NS-205AFC-T CR     | Multi-mode, SC Connector, 4-port 10/100 Mbps with 1 Fiber port Switch (RoHS)                     |
| NS-205AFCS-T CR    | Single-mode 30 km, SC Connector, 4-port 10/100 Mbps with 1 Fiber port Switch (RoHS)              |
| NS-205AFCS-60T CR  | Single-mode 60 km, SC Connector, 4-port 10/100 Mbps with 1 Fiber port Switch (RoHS)              |
| NSM-205AFT-T CR    | Multi-mode, ST Connector, 4-port 10/100 Mbps with 1 Fiber port Switch; metal case (RoHS)         |
| NSM-205AFC-T CR    | Multi-mode, SC Connector, 4-port 10/100 Mbps with 1 Fiber port Switch; metal case (RoHS)         |
| NSM-205AFCS-T CR   | Single-mode 30 km, SC Connector, 4-port 10/100 Mbps with 1 Fiber port Switch; metal case (RoHS)  |
| NSM-205AFCS-60T CR | Single-mode 60 km, SC Connector, 4-port 10/100 Mbps with 1 Fiber port Switch; metal case (RoHS)  |
| NS-206AFT-T CR     | Multi-mode, ST Connector, 4-port 10/100 Mbps with 2 Fiber ports Switch (RoHS)                    |
| NS-206AFC-T CR     | Multi-mode, SC Connector, 4-port 10/100 Mbps with 2 Fiber ports Switch (RoHS)                    |
| NS-206AFCS-T CR    | Single-mode 30 km, SC Connector, 4-port 10/100 Mbps with 2 Fiber ports Switch (RoHS)             |
| NS-206AFCS-60T CR  | Single-mode 60 km, SC Connector, 4-port 10/100 Mbps with 2 Fiber ports Switch (RoHS)             |
| NSM-206AFT-T CR    | Multi-mode, ST Connector, 4-port 10/100 Mbps with 2 Fiber ports Switch; metal case (RoHS)        |
| NSM-206AFC-T CR    | Multi-mode, SC Connector, 4-port 10/100 Mbps with 2 Fiber ports Switch; metal case (RoHS)        |
| NSM-206AFCS-T CR   | Single-mode 30 km, SC Connector, 4-port 10/100 Mbps with 2 Fiber ports Switch; metal case (RoHS) |
| NSM-206AFCS-60T CR | Single-mode 60 km, SC Connector, 4-port 10/100 Mbps with 2 Fiber ports Switch; metal case (RoHS) |

NS-209F Series

NSM-209F Series



### Features ▶▶▶

- Each port supports both 10/100 Mbps speed auto negotiation
- Automatic MDI/MDI-X crossover for plug-and-play
- Full duplex IEEE 802.3x and half duplex backpressure flow control
- DIN-Rail Mounting or Wall Mounting for NSM-209F series
- MAC address 2048
- Store-and-forward architecture
- Supports +12 V<sub>DC</sub> ~ +48 V<sub>DC</sub> power input
- DIN-Rail Mounting for NS-209F series

### Introduction

The NS-209F/NSM-209F series is a Unmanaged 8-port Industrial 10/100 Base-TX with 100 Base-FX Switch that secures data transmission by using fiber optic transmission to provide immunity from EMI/RFI interference. It uses Ethernet for transmitting a signal up to 30 km, and is the perfect solution for applications where transmission must be protected from electrical exposure, surges, lightning or chemical corrosion.

The NS-209F/NSM-209F series operates at full duplex mode. In full duplex mode, range is 30 km with 8.3/125, 8.7/125, 9/125 or 10/125 μm fiber cables.

NSM-209F provides two power inputs that can be connected simultaneously to live DC power sources. If one of the power inputs fails, the other live source will act as a backup to automatically support the NSM-209F's power needs.

### Specifications

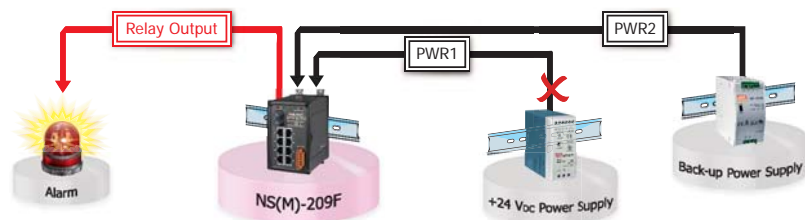
| Models              | NS-209F Series  | NSM-209F Series |
|---------------------|---|-----------------|
| Technology          |   |                 |
| Standards           | IEEE 802.3, 802.3u, 802.3x  |                 |
| Processing Type     | Store & forward; wire speed switching   |                 |
| MAC Addresses       | 2048  |                 |
| Memory Bandwidth    | 2 Gbps  |                 |
| Frame Buffer Memory | 512 Kbit  |                 |
| Flow Control        | IEEE 802.3x flow control, back pressure flow control                                    |                 |
| Ethernet Interface  |   |                 |
| RJ-45 Ports         | 10/100 Base-T(X) auto negotiation speed, F/H duplex mode, and auto MDI/MDI-X connection |                 |
| LED Indicators      | Power, Link/Act, 10/100M  |                 |
| Fiber Optics Port   | 100 Base-FX   |                 |
| Ethernet Isolation  | 1500 V <sub>rms</sub> 1 minute  |                 |
| EMS Protection      | Yes   |                 |

| Models                                    |  | NS-209F Series  | NSM-209F Series  |
|---|--|---|--|
| Fiber Interface (100 Base-FX; SC/ST type) |  |   |  |
| Multi-Mode                                | NS-209FT/FC<br>NSM-209FT/FC                              | Multi mode fiber cables: 50/125, 62.5/125 or 100/140 μm<br>Distance: 2 km, (62.5/125 μm recommended) for full duplex<br>Wavelength: 1300 or 1310 nm<br>Min. TX Output: -20 dBm<br>Max. TX Output: -14 dBm<br>Max. RX Sensitivity: -32 dBm     |  |
| Fiber Interface (100 Base-FX; SC/ST type) |  |   |  |
| Single-Mode                               | NS-209FCS<br>NSM-209FCS                                  | Single-mode fiber cables: 8.3/125, 8.7/125, 9/125 or 10/125 μm<br>Distance: 30 km, (9/125 μm recommended) for full duplex<br>Wavelength: 1300 or 1310 nm<br>Min. TX Output: -15 dBm<br>Max. TX Output: -8 dBm<br>Min. RX Sensitivity: -34 dBm |  |
| Power Input                               |  |   |  |
| Input Voltage Range                       | +12 V <sub>DC</sub> ~ +48 V <sub>DC</sub> (Non-isolated) |   | +12 V <sub>DC</sub> ~ +48 V <sub>DC</sub> (Non-isolated)<br>Redundant Inputs with one relay output (1 A @ 24 V <sub>DC</sub> ) for alarm |
| Power Consumption                         | 0.26 A @ 24 V <sub>DC</sub>                              |   |  |
| LED Indicator                             | Yes  |   |  |
| Protection                                | Power reverse polarity protection                        |   |  |
| +/-4 kV ESD Protection                    | Yes  |   |  |
| Mechanical                                |  |   |  |
| Casing                                    | Plastic (Flammability UL 94V-0)                          |   | Metal (IP20 Protection)  |
| Dimensions (W x L x H)                    | 64 mm x 101 mm x 118 mm                                  |   | 73 mm x 105 mm x 132 mm  |
| Installation                              | DIN-Rail Mounting  |   | DIN-Rail Mounting or Wall Mounting   |
| Environmental                             |  |   |  |
| Operating Temperature                     | 0 °C ~ +70 °C  |   |  |
| Storage Temperature                       | -20 °C ~ +85 °C  |   |  |
| Ambient Relative Humidity                 | 10% ~ 90% RH, non-condensing                             |   |  |

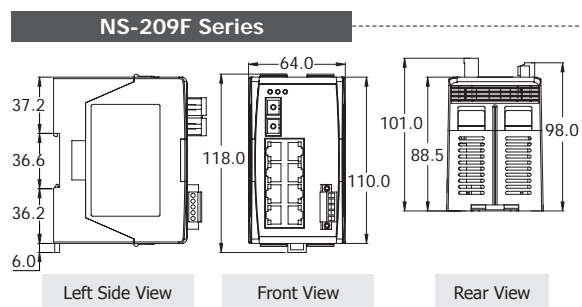
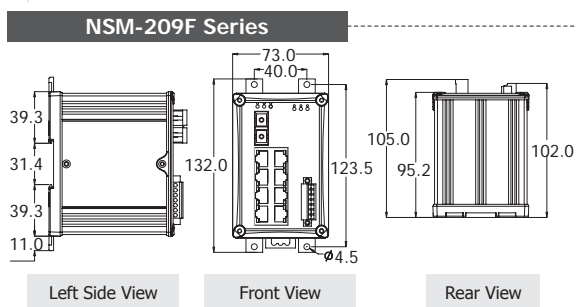
### Redundant Power Input

Both power inputs can be connected simultaneously to live DC power sources.

If one power source fails, the other live source will act as a backup, and automatically supplies all of NSM-209F series power needs.



### Dimensions (Units: mm)



### Ordering Information

|              |  |
|--------------|--|
| NS-209FT CR  | Multi-mode, ST Connector, 8-port 10/100 Mbps with 1 Fiber port Switch (RoHS)             |
| NS-209FC CR  | Multi-mode, SC Connector, 8-port 10/100 Mbps with 1 Fiber port Switch (RoHS)             |
| NS-209FCS CR | Single-mode 30 km, SC Connector, 8-port 10/100 Mbps with 1 Fiber port Switch (RoHS)      |
| NSM-209FT    | Multi-mode, ST Connector, 8-port 10/100 Mbps with 1 Fiber port Switch; metal case        |
| NSM-209FC    | Multi-mode, SC Connector, 8-port 10/100 Mbps with 1 Fiber port Switch; metal case        |
| NSM-209FCS   | Single-mode 30 km, SC Connector, 8-port 10/100 Mbps with 1 Fiber port Switch; metal case |

### Accessories

|           |   |
|-----------|---|
| DIN-KA52F | 24V/1.04A, 25 W Power Supply with DIN-Rail Mounting |
| MDR-20-24 | 24V/1A, 24 W Power Supply with DIN-Rail Mounting    |
| MDR-60-24 | 24V/2.5A, 60 W Power Supply with DIN-Rail Mounting  |



## How PoE Works

There are two basic components in an IEEE 802.3af compliant PoE network:

- Power Sourcing Equipment (PSE)  
A device that supplies power
- Powered Device (PD)  
A device that receives and utilizes the power

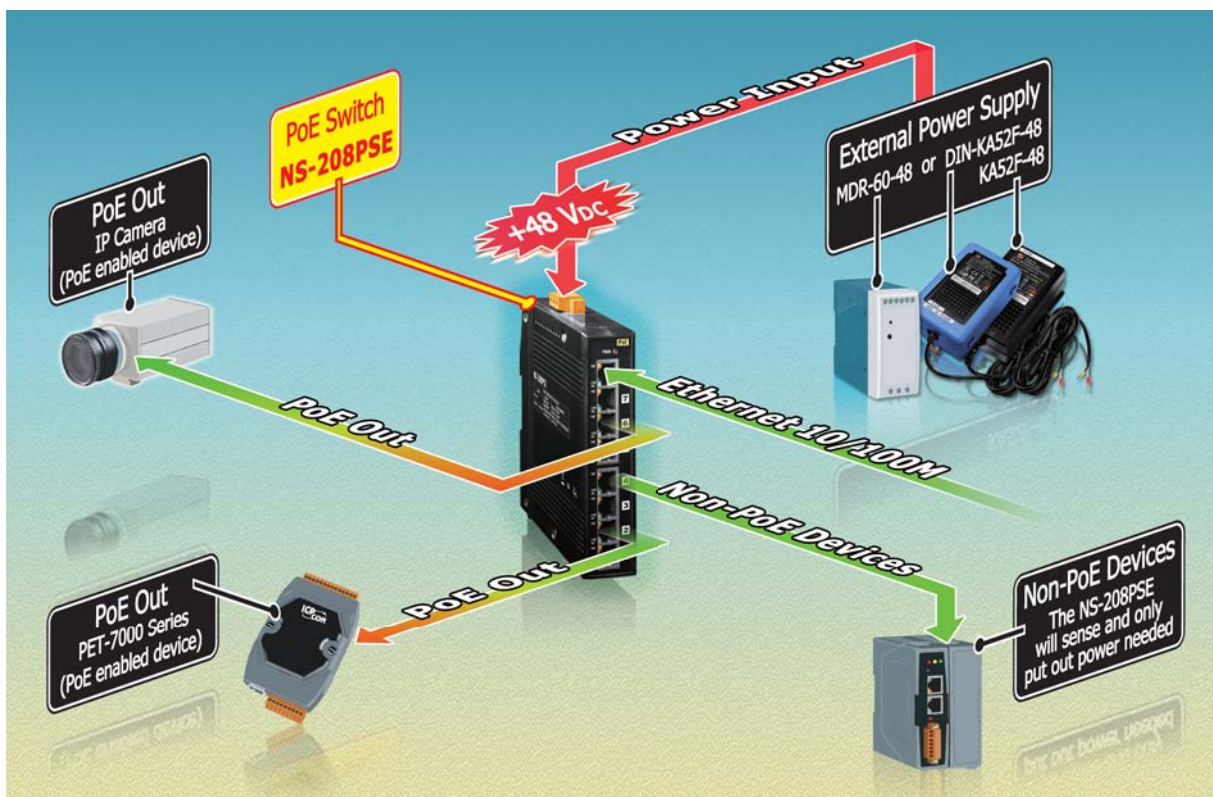
When the PSE connects to a network device, the PSE determines or “discovers” if the device is a PD or not. This prevents non-PoE enabled Ethernet equipment from receiving power, which could cause damage. The PSE applies two small current-limited voltage signals across the cable as it checks for the presence of a characteristic resistance. If resistance is detected, power is provided. A PD may also classify how much power it will require from the PSE. This feature supports the PSE by helping it supply power in an efficient way.

After the PSE has discovered a PD, it supplies 48 V and a maximum current of 350 mA. Voltage may be lost along the cable, depending on length of cable. However, a minimum of about 13 W is available to each PD, which is adequate power for numerous applications including VoIP telephones, WAPs, security cameras and building automation systems.

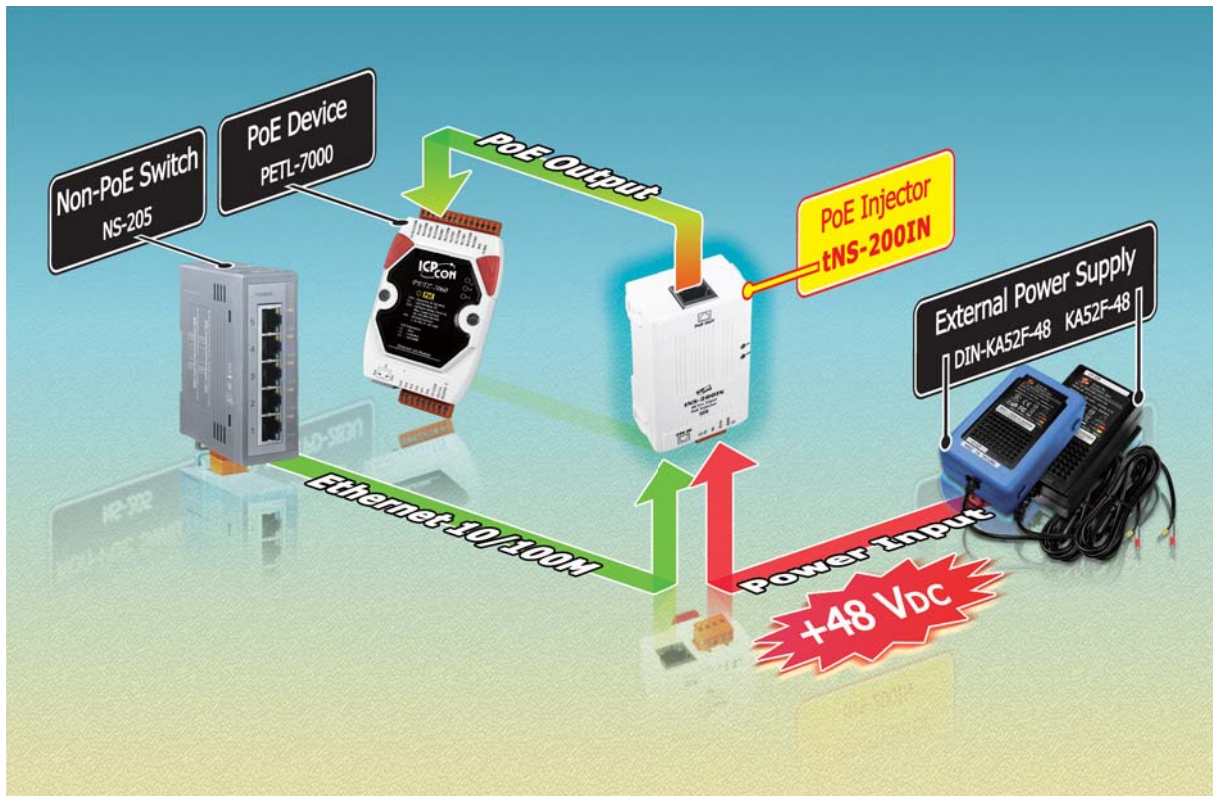
Once the PSE begins to provide power, it continuously monitors the PD current draw. If the PD current consumption drops below a minimum value, for example when the device is unplugged, the PSE discontinues supplying power and the discovery process begins again.

The IEEE 802.3af standard defines two different types of PSEs: endspan and midspan.

An endspan PSE - Integrates the power sourcing functionality with a network switch. Endspans available today look and function exactly the same as any other Ethernet switch, except they can provide PoE in addition to routing data. Since Ethernet data pairs use transformers coupled at each end of the link, DC power can easily be added to the center tap of the transformer without disrupting the data. In this mode of operation, an endspan injects both power and data on pin-pairs 3 and 6 and pin-pairs 1 and 2.

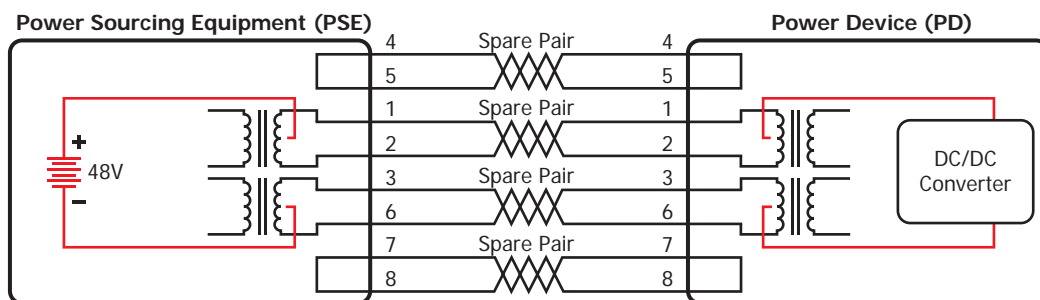


A midspan PSE - Fits in between the switch and the PD. It supplies power over the unused cable pin-pairs 4 and 5 and pin-pairs 7 and 8. Data is routed through the midspan device without modification. These devices are usually mounted adjacent to the Ethernet switch in an equipment rack. It is important to note that although the PSE can only use pin-pairs assigned from an endspan or a midspan, the PD must have the capability to accept power from both.

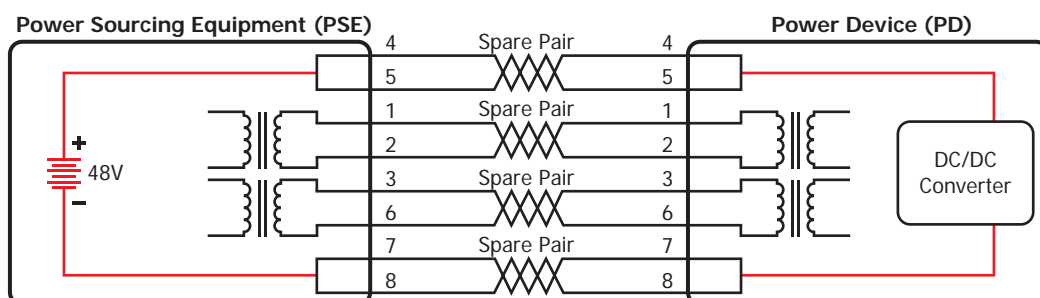


Power is carried over the cabling using two techniques: Mode A and Mode B

**Mode A:** Power is carried on the same conductors as data. CAT-5 cabling for standard 10 BaseT and 100 Base-TX Ethernet uses two data/signal pairs connected to pins 1 and 2 and pins 3 and 6 on RJ-45 connectors. Power sourcing equipment superimposes power onto these pins via the center tap of internal signal coupling transformers. In the powered device (PD) the power is derived from these lines using the reverse technique.



**Mode B:** The twisted pair on pins 4 and 5 is connected to form the positive electric power supply, while the pair on pins 7 and 8 is connected to form the negative supply. Each pair can accommodate either polarity.



The IEEE 802.af standard specifies that all power sourcing equipment and powered devices must be compatible with both methods above. However, only one of the methods may be used at a time.

NS-205PSE



NS-105PSE



LAN

x 1



PoE + LAN

x 4



Wide Temperature



DIN-Rail Mount



Input Voltage



CE



FCC



RoHS



WEEE

### Features ▶▶▶

- Automatic MDI/MDI-X crossover for plug-and-play
- Full duplex IEEE 802.3x and half duplex backpressure flow control
- Supports operating temperatures from -40 °C ~ +75 °C
- Each port supports both 10/100 Mbps speed auto negotiation
- Power Inputs +46 V<sub>DC</sub> ~ +55 V<sub>DC</sub>
- Store-and-forward architecture
- 3.2 Gbps high performance memory bandwidth
- IEEE 802.3af compliant PoE ports
- Slim packaging fits on your DIN-Rail Mounting

### Introduction

The NS-105PSE/NS-205PSE is a 5-port unmanaged PoE (Power over Ethernet) Industrial Ethernet switch; it supports 4 PoE ports which are classified as power source equipment (PSE). The NS-105PSE/NS-205PSE makes centralized power supply come true and provides up to 15.4 watts of power per PSE port.

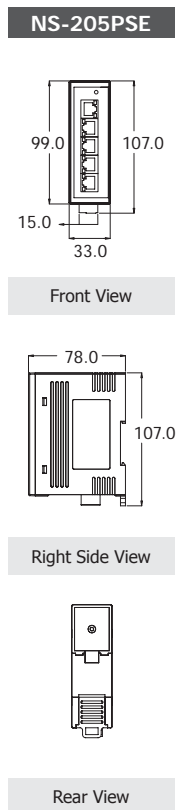
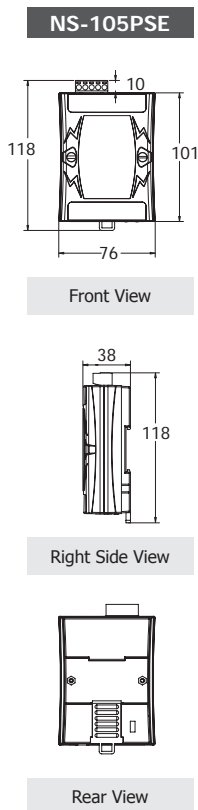
### Specifications

| Models              | NS-105PSE   | NS-205PSE |
|---------------------|---|-----------|
| Technology          |   |           |
| Standards           | IEEE 802.3, 802.3u, 802.3x, 802.3af (Power over Ethernet)                               |           |
| Processing Type     | Store & forward; wire speed switching   |           |
| MAC Addresses       | 1024  |           |
| Memory Bandwidth    | 3.2 Gbps  |           |
| Frame Buffer Memory | 512 Kbit  |           |
| Flow Control        | IEEE 802.3x flow control, back pressure flow control                                    |           |
| Interface           |   |           |
| RJ-45 Ports         | 10/100 Base-T(X) auto negotiation speed, F/H duplex mode, and auto MDI/MDI-X connection |           |
| LED Indicators      | Power, Link/Act, 10/100M, Power Device is detected                                      |           |
| Ethernet Isolation  | 1500 V <sub>rms</sub> 1 minute  |           |
| EMS Protection      | Yes   |           |

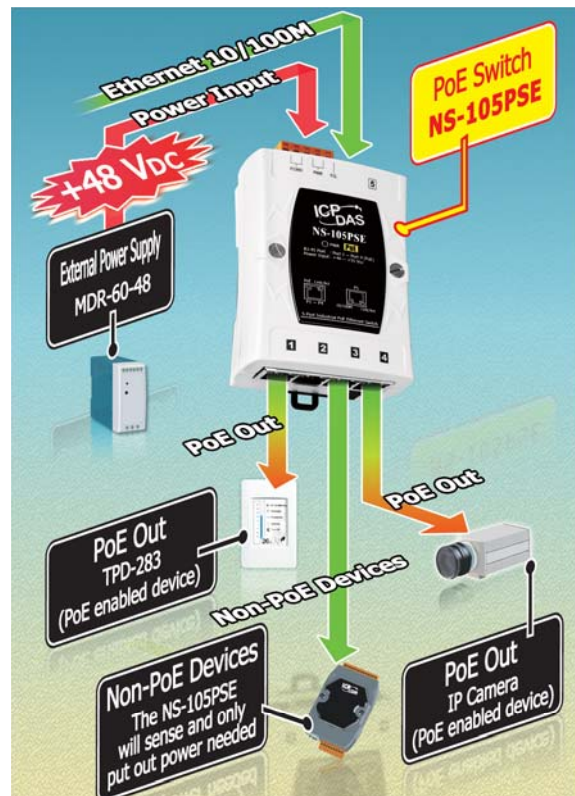


| Models                    | NS-105PSE  | NS-205PSE              |
|---------------------------|--|------------------------|
| Power Input               |  |                        |
| Input Voltage Range       | +46 V <sub>DC</sub> ~ +55 V <sub>DC</sub>  |                        |
| Power Consumption         | 0.05 A @ 48 V <sub>DC</sub> without PD loading<br>1.45 A @ 48 V <sub>DC</sub> with PD full loading |                        |
| Protection                | Power reverse polarity protection  |                        |
| EMS Protection            | Yes  |                        |
| Connector                 | 3-Pin Removable Terminal Block   |                        |
| PoE Technology            |  |                        |
| PoE Compliance            | 100% IEEE 802.3af compliant  |                        |
| PoE Classification        | PSE (Power Sourcing Equipment)   |                        |
| PoE Power                 | Up to 15.4 watts per channel   |                        |
| PoE Operation             | Automatic detection and power management   |                        |
| PoE Pin Assignments       | V+ (Pin 1, 3), V- (Pin 2, 4)   |                        |
| PoE Disconnect Mode       | DC disconnect  |                        |
| Mechanical                |  |                        |
| Casing                    | Plastic (Flammability UL 94V-0)  |                        |
| Dimensions (W x L x H)    | 76 mm x 38 mm x 118 mm   | 33 mm x 78 mm x 107 mm |
| Installation              | DIN-Rail Mounting  |                        |
| Environment               |  |                        |
| Operating Temperature     | -40 °C ~ +75 °C  |                        |
| Storage Temperature       | -40 °C ~ +85 °C  |                        |
| Ambient Relative Humidity | 10% ~ 90% RH, non-condensing   |                        |

### Dimensions (Units: mm)



### Applications



### Ordering Information

|              |   |
|--------------|---|
| NS-105PSE CR | Unmanaged 5-port 10/100 Mbps PoE (PSE) Ethernet Switch (RoHS) |
| NS-205PSE CR | Unmanaged 5-port 10/100 Mbps PoE (PSE) Ethernet Switch (RoHS) |

### Accessories

|              |   |
|--------------|---|
| DR-120-48    | 48V/2.5A, 120 W Power Supply with DIN-Rail Mounting |
| MDR-60-48    | 24V/1.25A, 60 W Power Supply with DIN-Rail Mounting |
| DIN-KA52F-48 | 48V/0.52A, 25 W Power Supply with DIN-Rail Mounting |



# NS-105PSE-24V *Available soon*

# NS-205PSE-24V/NSM-205PSE-24V *NEW*

5-port 10/100 Mbps PoE (PSE) Ethernet Switch with +24 V<sub>DC</sub> Input

# NSM-210PSE-24V *Available soon*

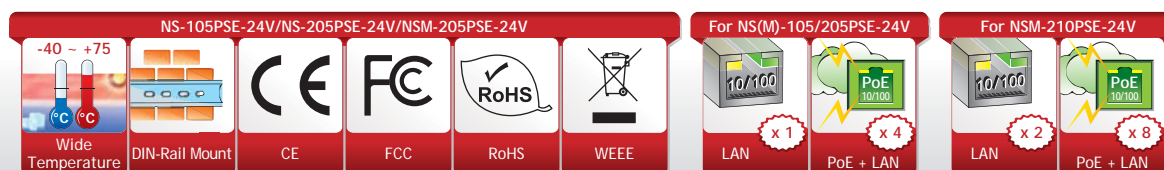
10-port 10/100 Mbps PoE (PSE) Ethernet Switch with +24 V<sub>DC</sub> Input

NS-105PSE-24V

NS-205PSE-24V

NSM-205PSE-24V

NSM-210PSE-24V



## Features ▶▶▶

- Automatic MDI/MDI-X crossover for plug-and-play
- Full duplex IEEE 802.3x and half duplex backpressure flow control
- Supports operating temperatures from -40 °C ~ +75 °C
- Each port supports both 10/100 Mbps speed auto negotiation
- Power Inputs +18 V<sub>DC</sub> ~ +32 V<sub>DC</sub>
- Store-and-forward architecture
- 3.2 Gbps high performance memory bandwidth
- IEEE 802.3af compliant PoE ports
- DIN-Rail Mounting

## Introduction

The NS-105PSE-24V/NS-205PSE-24V/NSM-205PSE-24V is a 5-port unmanaged PoE (Power over Ethernet) Industrial Ethernet switch; it supports 4 PoE ports which are classified as power source equipment (PSE). The NS-105PSE-24V/NS-205PSE-24V/NSM-205PSE-24V makes centralized power supply come true and provides up to 15.4 watts of power per PSE port.

The NSM-210PSE-24V is a 10-port unmanaged Ethernet switch; it supports 8 PoE ports which are classified as power source equipment (PSE).

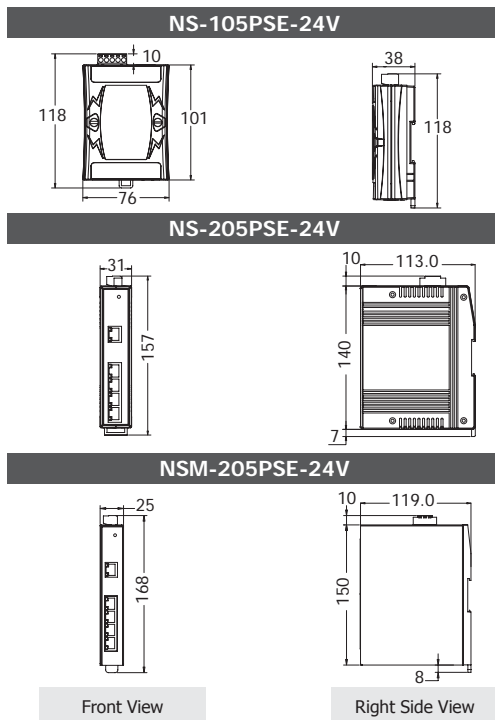
Ethernet switches are designed with +24 V<sub>DC</sub> to +48 V<sub>DC</sub> boost for PoE application where +48 V<sub>DC</sub> power supply is not available.

## Specifications

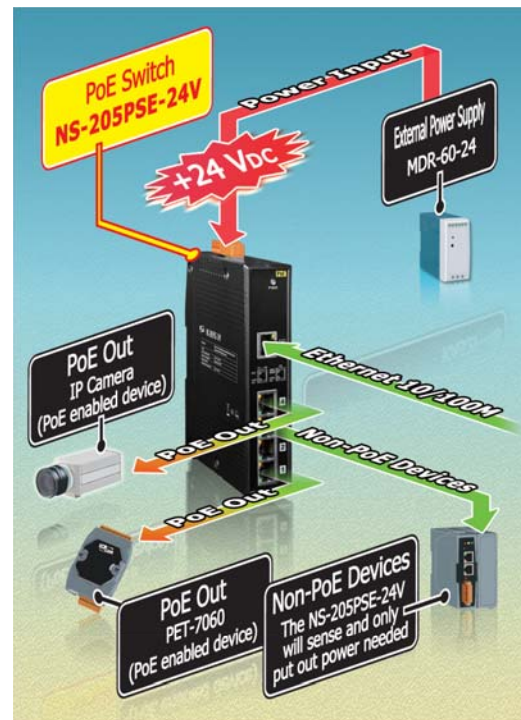
| Models              | NS-105PSE-24V   | NS-205PSE-24V | NSM-205PSE-24V | NSM-210PSE-24V |
|---------------------|---|---------------|----------------|----------------|
| Technology          |   |               |                |                |
| Standards           | IEEE 802.3, 802.3u, 802.3x, 802.3af (Power over Ethernet)                               |               |                |                |
| Processing Type     | Store & forward; wire speed switching   |               |                |                |
| MAC Addresses       | 1024  |               |                |                |
| Memory Bandwidth    | 3.2 Gbps  |               |                |                |
| Frame Buffer Memory | 512 Kbit  |               |                |                |
| Flow Control        | IEEE 802.3x flow control, back pressure flow control                                    |               |                |                |
| Interface           |   |               |                |                |
| RJ-45 Ports         | 10/100 Base-T(X) auto negotiation speed, F/H duplex mode, and auto MDI/MDI-X connection |               |                |                |
| LED Indicators      | Power, Link/Act, 10/100M, Power Device is detected                                      |               |                |                |
| Ethernet Isolation  | 1500 V <sub>rms</sub> 1 minute  |               |                |                |
| EMS Protection      | Yes   |               |                |                |

| Models                                | NS-105PSE-24V   | NS-205PSE-24V                  | NSM-205PSE-24V          | NSM-210PSE-24V   |
|---------------------------------------|---|--------------------------------|-------------------------|--|
| Power Input                           |   |                                |                         |  |
| Input Voltage Range                   | +18 V <sub>DC</sub> ~ +32 V <sub>DC</sub>   |                                |                         |  |
| Power Consumption                     | 0.24 A @ 24 V <sub>DC</sub> without PD loading<br>3.2 A @ 24 V <sub>DC</sub> with PD full loading |                                |                         | 0.6 A @ 24 V <sub>DC</sub> without PD loading<br>6.5 A @ 24 V <sub>DC</sub> with PD full loading |
| Protection                            | Power reverse polarity protection   |                                |                         |  |
| EMS Protection                        | Yes   |                                |                         |  |
| Connector                             | 5-Pin Removable Terminal Block  | 3-Pin Removable Terminal Block |                         |  |
| PoE Technology                        |   |                                |                         |  |
| PoE Compliance                        | 100% IEEE 802.3af compliant   |                                |                         |  |
| PoE Classification                    | PSE (Power Sourcing Equipment)  |                                |                         |  |
| PoE Power                             | Up to 15.4 watts per channel  |                                |                         |  |
| PoE Operation                         | Automatic detection and power management  |                                |                         |  |
| PoE Pin Assignments                   | V+ (Pin 1, 3), V- (Pin 2, 4)  |                                |                         |  |
| PoE Disconnect Mode                   | DC disconnect   |                                |                         |  |
| Mechanical                            |   |                                |                         |  |
| Casing                                | Plastic (Flammability UL 94V-0)   |                                | Metal (IP30 Protection) |  |
| Dimensions (W x L x H)<br>(Units: mm) | 76 x 38 x 118   | 31 x 113 x 157                 | 25 x 119 x 168          | 25 x 119 x 168   |
| Installation                          | DIN-Rail Mounting   |                                |                         |  |
| Environment                           |   |                                |                         |  |
| Operating Temperature                 | -40 °C ~ +75 °C   |                                |                         |  |
| Storage Temperature                   | -40 °C ~ +85 °C   |                                |                         |  |
| Ambient Relative Humidity             | 10% ~ 90% RH, non-condensing  |                                |                         |  |

### Dimensions (Units: mm)



### Applications



### Ordering Information

|                   |   |
|-------------------|---|
| NS-105PSE-24V CR  | Unmanaged 5-port 10/100 Mbps PoE (PSE) Ethernet Switch; +24 Vdc Input (RoHS)                    |
| NS-205PSE-24V CR  | Unmanaged 5-port 10/100 Mbps PoE (PSE) Ethernet Switch; +24 Vdc Input (RoHS)                    |
| NSM-205PSE-24V CR | Unmanaged 5-port 10/100 Mbps PoE (PSE) Ethernet Switch with Metal Casing; +24 Vdc Input (RoHS)  |
| NSM-210PSE-24V CR | Unmanaged 10-port 10/100 Mbps PoE (PSE) Ethernet Switch with Metal Casing; +24 Vdc Input (RoHS) |

### Accessories

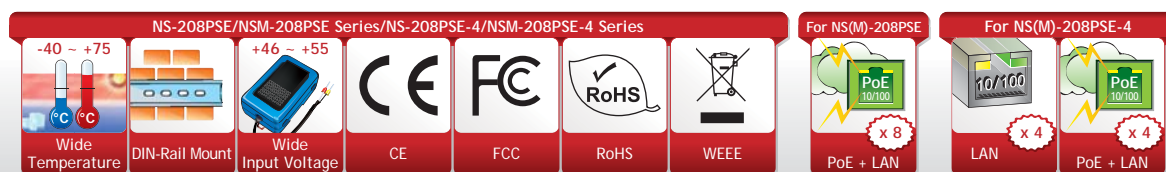
|           |   |
|-----------|---|
| DP-1200   | 24V/5A, 120 W Power Supply with DIN-Rail Mounting   |
| MDR-60-24 | 24V/2.5A, 60 W Power Supply with DIN-Rail Mounting  |
| DIN-KA52F | 24V/1.04A, 25 W Power Supply with DIN-Rail Mounting |

# NS-208PSE/NSM-208PSE NEW

8-port Industrial 10/100 Mbps Ethernet with 8-PoE (PSE) Switch

# NS-208PSE-4/NSM-208PSE-4 NEW

8-port Industrial 10/100 Mbps Ethernet with 4-PoE (PSE) Switch



## Features ▶▶▶

- Each port supports both 10/100 Mbps speed auto negotiation
- Full duplex IEEE 802.3x and half duplex backpressure flow control
- Auto-detection of PD (powered devices) and automatic power management
- Over-temperature, over-current and over/under-voltage detection
- Supports operating temperatures from -40 °C ~ +75 °C
- Automatic MDI/MDI-X crossover for plug-and-play
- Store-and-forward architecture
- 8 PoE ports for NS-208PSE/NSM-208PSE;  
4 PoE ports for NS-208PSE-4/NSM-208PSE-4
- Supports +46 V<sub>DC</sub> ~ +55 V<sub>DC</sub> power input
- DIN-Rail Mounting

## Introduction

The NS-208PSE/NS-208PSE-4 is an 8-port unmanaged PoE (Power over Ethernet) Industrial Ethernet switch, it supports 8/4 PoE ports which are classified as power source equipment (PSE). The NS-208PSE/NS-208PSE-4 makes centralized power supply come true and provides up to 15.4 W of power per port. The NS-208PSE/NS-208PSE-4 can be used to power IEEE802.3af compliant powered devices (PD) by Ethernet cable and eliminates the need for additional power wiring.

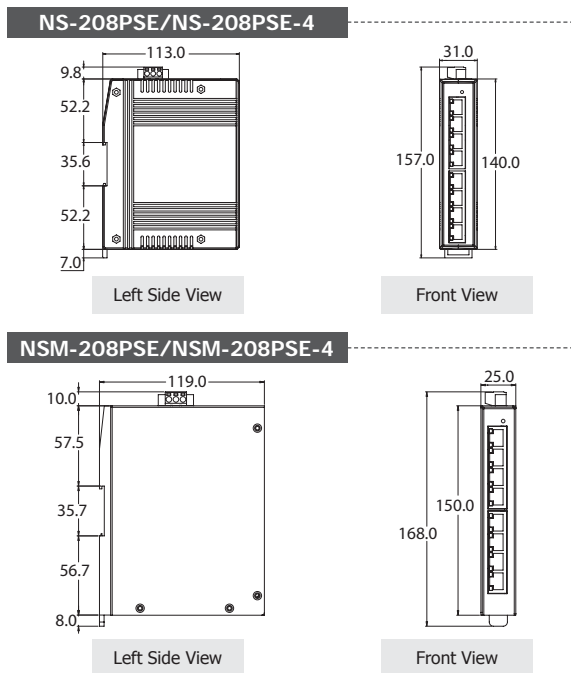
The NS-208PSE/NSM-208PSE is exactly the same as the NS-208PSE-4/NSM-208PSE-4, except for the PoE ports.

## Specifications

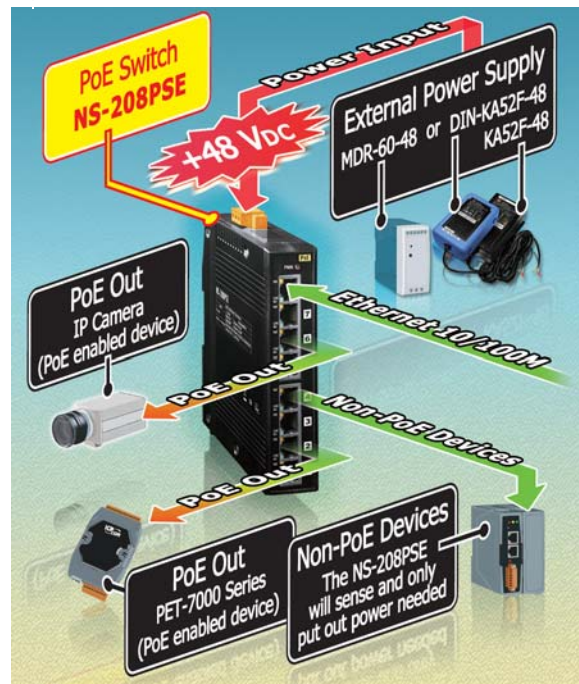
| Models              | NS-208PSE   | NSM-208PSE | NS-208PSE-4 | NSM-208PSE-4 |
|---------------------|---|------------|-------------|--------------|
| Technology          |   |            |             |              |
| Standards           | IEEE 802.3, 802.3u, 802.3x ,802.3af (Power over Ethernet)                               |            |             |              |
| Processing Type     | Store & forward; wire speed switching   |            |             |              |
| MAC Addresses       | 1024  |            |             |              |
| Memory Bandwidth    | 3.2 Gbps  |            |             |              |
| Frame Buffer Memory | 512 Kbit  |            |             |              |
| Flow Control        | IEEE 802.3x flow control, back pressure flow control                                    |            |             |              |
| Interface           |   |            |             |              |
| RJ-45 Ports         | 10/100 Base-T(X) auto negotiation speed, F/H duplex mode, and auto MDI/MDI-X connection |            |             |              |
| LED Indicators      | Power, Link/Act, Power Device is detected   |            |             |              |
| Ethernet Isolation  | 1500 V <sub>rms</sub> 1 minute  |            |             |              |
| EMS Protection      | Yes   |            |             |              |

| Models                    | NS-208PSE  | NSM-208PSE              | NS-208PSE-4  | NSM-208PSE-4            |
|---------------------------|--|-------------------------|--|-------------------------|
| Power Input               |  |                         |  |                         |
| Input Voltage Range       | +46 V <sub>DC</sub> ~ +55 V <sub>DC</sub> for PoE output   |                         |  |                         |
| Power Consumption         | 0.1 A @ 48 V <sub>DC</sub> without PD loading<br>2.8 A @ 48 V <sub>DC</sub> with PD full loading |                         | 0.09 A @ 48 V <sub>DC</sub> without PD loading<br>1.45 A @ 48 V <sub>DC</sub> with PD full loading |                         |
| Protection                | Power reverse polarity protection  |                         |  |                         |
| ESD Protection            | Yes  |                         |  |                         |
| Connector                 | 3-Pin Removable Terminal Block   |                         |  |                         |
| PoE Technology            |  |                         |  |                         |
| PoE Compliance            | 100% IEEE 802.3af compliant  |                         |  |                         |
| PoE Classification        | PSE (Power Sourcing Equipment)   |                         |  |                         |
| PoE Voltage               | +46 V <sub>DC</sub> ~ +55 V <sub>DC</sub> depending on power input                               |                         |  |                         |
| PoE Power                 | Up to 15.4 watts per channel   |                         |  |                         |
| PoE Operation             | Automatic detection and power management   |                         |  |                         |
| PoE Pin Assignments       | V+ (Pin 1, 2), V- (Pin 3, 6)   |                         |  |                         |
| PoE Disconnect Mode       | DC disconnect  |                         |  |                         |
| Mechanical                |  |                         |  |                         |
| Casing                    | Plastic (Flammability UL 94V-0)  | Metal (IP30 Protection) | Plastic (Flammability UL 94V-0)  | Metal (IP30 Protection) |
| Dimensions (W x L x H)    | 31 mm x 113 mm x 157 mm  | 25 mm x 119 mm x 168 mm | 31 mm x 113 mm x 157 mm  | 25 mm x 119 mm x 168 mm |
| Installation              | DIN-Rail Mounting  |                         |  |                         |
| Environment               |  |                         |  |                         |
| Operating Temperature     | -40 °C ~ +75 °C  |                         |  |                         |
| Storage Temperature       | -40 °C ~ +85 °C  |                         |  |                         |
| Ambient Relative Humidity | 10% ~ 90% RH, non-condensing   |                         |  |                         |

### Dimensions (Units: mm)



### Applications



### Ordering Information

|                 |   |
|-----------------|---|
| NS-208PSE CR    | 8-port Industrial 10/100 Mbps Ethernet with 8-PoE (PSE) Switch (RoHS)               |
| NS-208PSE-4 CR  | 8-port Industrial 10/100 Mbps Ethernet with 4-PoE (PSE) Switch (RoHS)               |
| NSM-208PSE CR   | 8-port Industrial 10/100 Mbps Ethernet with 8-PoE (PSE) Switch; Metal Casing (RoHS) |
| NSM-208PSE-4 CR | 8-port Industrial 10/100 Mbps Ethernet with 4-PoE (PSE) Switch; Metal Casing (RoHS) |

### Accessories

|              |   |
|--------------|---|
| MDR-60-48    | 48 V/1.25 A, 60 W Power Supply with DIN-Rail Mounting |
| DIN-KA52F-48 | 48 V/0.52 A, 25 W Power Supply with DIN-Rail Mounting |
| KA52F-48     | 48 V/0.52 A, 25 W Power Supply                        |



# NS-205PF Series/NSM-205PF Series

4-port 10/100 Mbps PoE (PSE) with 1 Fiber Port Switch

# NS-205PF-24V Series/NSM-205PF-24V Series

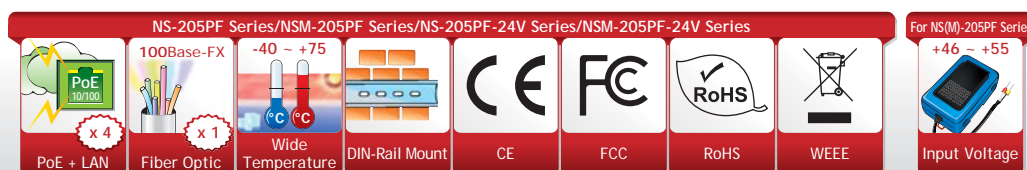
4-port 10/100 Mbps PoE (PSE) with 1 Fiber Port and +24 V<sub>DC</sub> Input Switch *Available soon*

NS-205PFC/FCS/FCS-60  
NS-205PFC-24V/FCS-24V/FCS-60-24V

NS-205PFT  
NS-205PFT-24V

NSM-205PFC/FCS/FCS-60  
NSM-205PFC-24V/FCS-24V/FCS-60-24V

NSM-205PFT  
NSM-205PFT-24V



## Features ▶▶▶

- Provides 1 x 100-FX fiber port plus 4 x Ethernet ports
- Each port supports both 10/100 Mbps speed auto negotiation
- Supports operating temperatures from -30 °C ~ +75 °C
- Full duplex IEEE 802.3x and half duplex backpressure flow control
- 4 PoE ports with Power Sourcing Equipment (PSE) operation
- Over-temperature, over-current and over/under-voltage detection
- Automatic MDI/MDI-X crossover for plug-and-play
- Store-and-forward architecture
- Auto-detection of PD (powered devices) and automatic power management
- DIN-Rail Mounting

## Introduction

The NS-205PF/NSM-205PF is a 4-port unmanaged PoE (PSE) with 1 fiber port switch; it supports 4 PoE ports which are classified as power source equipment (PSE). The NS-205PF/NSM-205PF makes centralized power supply come true and provides up to 15.4 watts of power per PSE port. Using fiber optics, you can prevent noise from interfering with your system and supports high-speed (100 Mbps) and high-distance (up to 60 km) transmissions.

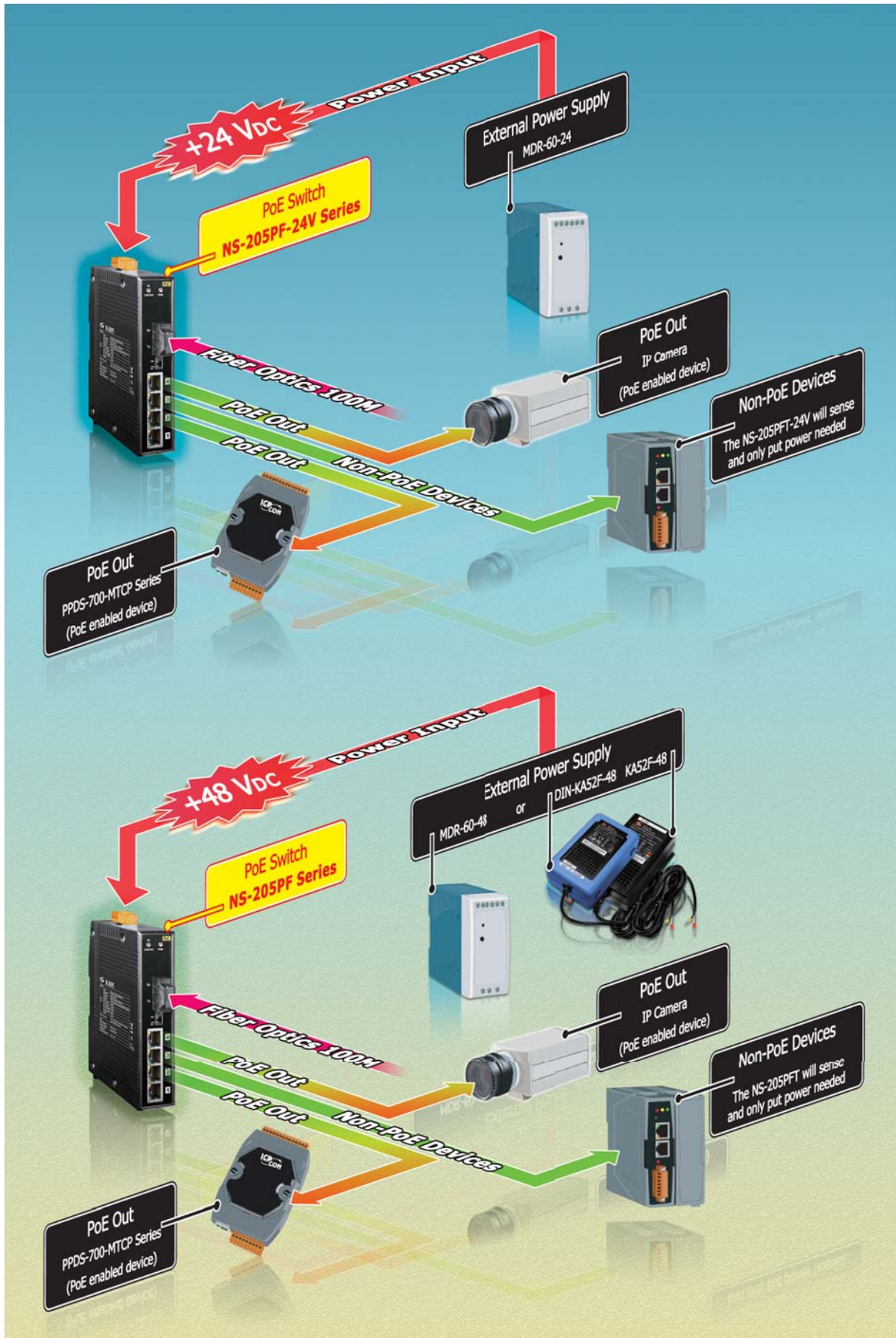
The NS-205PF-24V/NSM-205PF-24V series is designed with +24 V<sub>DC</sub> to +48 V<sub>DC</sub> boost for PoE application where +48 V<sub>DC</sub> power supply is not available.

## Comparison Table of 4-port 10/100 Mbps PoE (PSE) with 1 Fiber Port Switch

| Mode Name              | NS-205PF-24V                              |  | NSM-205PF-24V           |  | NS-205PF                                  | NSM-205PF               |
|------------------------|---|--|-------------------------|--|---|-------------------------|
| PoE                    | 802.3af                                   |  |                         |  |   |                         |
| Input Voltage Range    | +18 V <sub>DC</sub> ~ +32 V <sub>DC</sub> |  |                         |  | +46 V <sub>DC</sub> ~ +55 V <sub>DC</sub> |                         |
| Operating Temperature  | -30 °C ~ +75 °C                           |  |                         |  |   |                         |
| Casing                 | Plastic                                   |  | Metal (IP30)            |  | Plastic                                   | Metal (IP30)            |
| Installation           | DIN-Rail Mounting                         |  |                         |  |   |                         |
| Dimensions (W x L x H) | 31 mm x 127 mm x 157 mm                   |  | 25 mm x 133 mm x 168 mm |  | 31 mm x 127 mm x 157 mm                   | 25 mm x 133 mm x 168 mm |

## Specifications

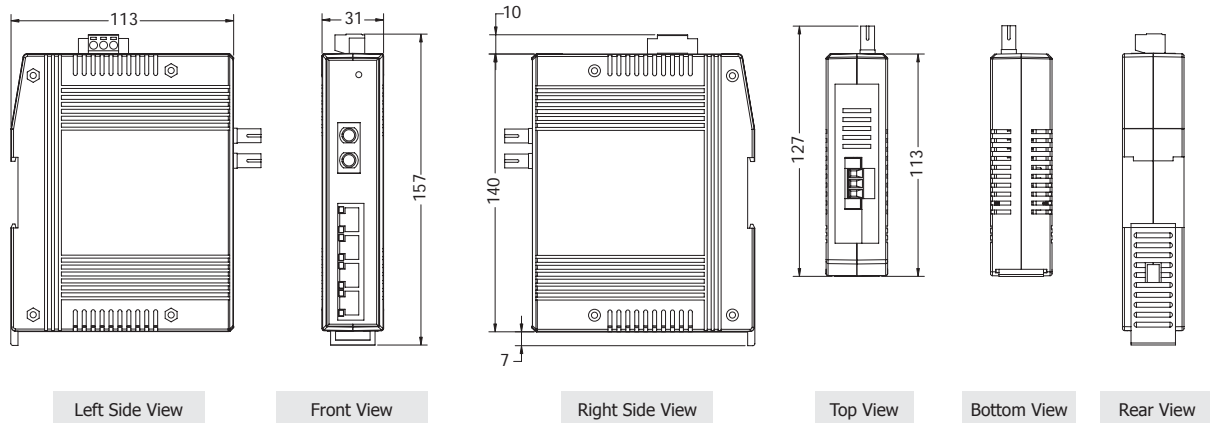
| Models                                    |                    | NS-205PF Series   | NSM-205PF Series           | NS-205PF-24V Series  | NSM-205PF-24V Series       |
|---|--------------------|---|----------------------------|--|----------------------------|
| Technology                                |                    |   |                            |  |                            |
| Standards                                 |                    | IEEE 802.3, 802.3u, 802.3x ,802.3af (Power over Ethernet)   |                            |  |                            |
| Processing Type                           |                    | Store & forward; wire speed switching   |                            |  |                            |
| MAC Addresses                             |                    | 1024  |                            |  |                            |
| Memory Bandwidth                          |                    | 3.2 Gbps  |                            |  |                            |
| Frame Buffer Memory                       |                    | 512 Kbit  |                            |  |                            |
| Flow Control                              |                    | IEEE 802.3x flow control, back pressure flow control  |                            |  |                            |
| Ethernet Interface                        |                    |   |                            |  |                            |
| RJ-45 Ports                               |                    | 10/100 Base-T(X) auto negotiation speed, F/H duplex mode, and auto MDI/MDI-X connection   |                            |  |                            |
| LED Indicators                            |                    | Power, Link/Act, Power Device is detected   |                            |  |                            |
| Ethernet Isolation                        |                    | 1500 V <sub>rms</sub> 1 minute  |                            |  |                            |
| +/-4 kV ESD Protection                    |                    | Yes   |                            |  |                            |
| Fiber Interface (100 Base-FX; SC/ST type) |                    |   |                            |  |                            |
| Multi-Mode                                | NS-205PFT          | Multi mode fiber cables: 50/125, 62.5/125 or 100/140 μm<br>Distance: 2 km, (62.5/125 μm recommended) for full duplex<br>Wavelength: 1300 or 1310 nm<br>Min. TX Output: -20 dBm<br>Max. TX Output: -14 dBm<br>Max. RX Sensitivity: -32 dBm<br>Min. RX Overload: -8 dBm<br>Budget: 12 dBm     |                            |  |                            |
|   | NS-205PFC          |   |                            |  |                            |
|   | NSM-205PFT         |   |                            |  |                            |
|   | NSM-205PFC         |   |                            |  |                            |
|   | NS-205PFT-24V      |   |                            |  |                            |
|   | NS-205PFC-24V      |   |                            |  |                            |
|   | NSM-205PFT-24V     |   |                            |  |                            |
| Single-Mode                               | NSM-205PFC-24V     | Single-mode fiber cables: 8.3/125, 8.7/125, 9/125 or 10/125 μm<br>Distance: 30 km, (9/125 μm recommended) for full duplex<br>Wavelength: 1300 or 1310 nm<br>Min. TX Output: -15 dBm<br>Max. TX Output: -8 dBm<br>Max. RX Sensitivity: -34 dBm<br>Min. RX Overload: -5 dBm<br>Budget: 19 dBm |                            |  |                            |
|   | NS-205PFCS         |   |                            |  |                            |
|   | NSM-205PFCS        |   |                            |  |                            |
|   | NS-205PFCS-24V     |   |                            |  |                            |
|   | NSM-205PFCS-24V    |   |                            |  |                            |
| Single-Mode                               | NS-205PFCS-60      | Single-mode fiber cables: 8.3/125, 8.7/125, 9/125 or 10/125 μm<br>Distance: 60 km, (9/125 μm recommended) for full duplex<br>Wavelength: 1300 or 1310 nm<br>Min. TX Output: -5 dBm<br>Max. TX Output: 0 dBm<br>Max. RX Sensitivity: -35 dBm<br>Min. RX Overload: -5 dBm<br>Budget: 30 dBm   |                            |  |                            |
|   | NSM-205PFCS-60     |   |                            |  |                            |
|   | NS-205PFCS-60-24V  |   |                            |  |                            |
|   | NSM-205PFCS-60-24V |   |                            |  |                            |
|   |                    |   |                            |  |                            |
| Power Input                               |                    |   |                            |  |                            |
| Input Voltage Range                       |                    | +46 V <sub>dc</sub> ~ +55 V <sub>dc</sub> for PoE output  |                            | +18 V <sub>dc</sub> ~ +32 V <sub>dc</sub>  |                            |
| Power Consumption                         |                    | 0.08 A @ 48 V <sub>dc</sub> without PD loading;<br>1.5 A @ 48 V <sub>dc</sub> with PD full loading  |                            | 0.24 A @ 24 V <sub>dc</sub> without PD loading;<br>3.2 A @ 24 V <sub>dc</sub> with PD full loading;<br>4.6 A @ 18 V <sub>dc</sub> with PD full loading |                            |
| Protection                                |                    | Power reverse polarity protection   |                            |  |                            |
| +/-4 kV ESD Protection                    |                    | Yes   |                            |  |                            |
| Connector                                 |                    | 3-Pin Removable Terminal Block  |                            |  |                            |
| PoE Technology                            |                    |   |                            |  |                            |
| PoE Compliance                            |                    | 100% IEEE 802.3af compliant   |                            |  |                            |
| PoE Classification                        |                    | PSE (Power Sourcing Equipment)  |                            |  |                            |
| PoE Voltage                               |                    | +48 V <sub>dc</sub> depending on power input  |                            |  |                            |
| PoE Voltage                               |                    | Up to 15.4 watts per channel  |                            |  |                            |
| PoE Operation                             |                    | Automatic detection and power management  |                            |  |                            |
| PoE Pin assignments                       |                    | V+ (Pin 1,2), V- (Pin 3,6)  |                            |  |                            |
| PoE disconnect mode                       |                    | DC disconnect   |                            |  |                            |
| Mechanical                                |                    |   |                            |  |                            |
| Casing                                    |                    | Plastic<br>(Flammability UL 94V-0)  | Metal<br>(IP30 Protection) | Plastic<br>(Flammability UL 94V-0)   | Metal<br>(IP30 Protection) |
| Dimensions (W x L x H) (Unit: mm)         |                    | 31 x 127 x 157  | 25 x 133 x 168             | 31 x 127 x 157   | 25 x 133 x 168             |
| Installation                              |                    | DIN-Rail Mounting   |                            |  |                            |
| Environmental                             |                    |   |                            |  |                            |
| Operating Temperature                     |                    | -30 °C ~ +75 °C   |                            |  |                            |
| Storage Temperature                       |                    | -40 °C ~ +85 °C   |                            |  |                            |
| Ambient Relative Humidity                 |                    | 10% ~ 90% RH, non-condensing  |                            |  |                            |



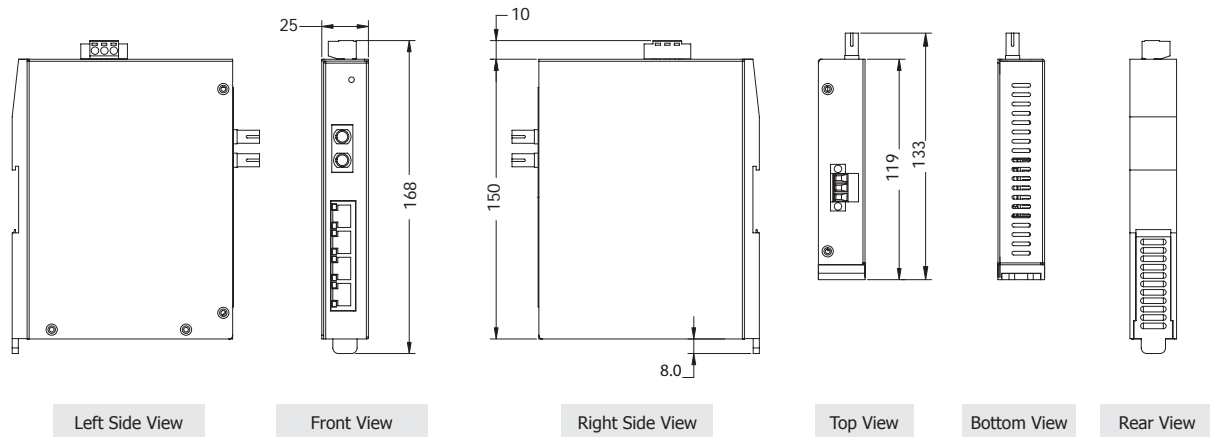


## Dimensions (Units: mm)

### NS-205PF/NS-205PF-24V Series



### NSM-205PF/NSM-205PF-24V Series



## Ordering Information

|                       |   |
|-----------------------|---|
| NS-205PFT CR          | Multi-mode, ST Connector, 4-port 10/100 Mbps PoE (PSE) with 1 Fiber port Switch (RoHS)  |
| NS-205PFC CR          | Multi-mode, SC Connector, 4-port 10/100 Mbps PoE (PSE) with 1 Fiber port Switch (RoHS)  |
| NS-205PFCS CR         | Single-mode 30 km, SC Connector, 4-port 10/100 Mbps PoE (PSE) with 1 Fiber port Switch (RoHS)   |
| NS-205PFCS-60 CR      | Single-mode 60 km, SC Connector, 4-port 10/100 Mbps PoE (PSE) with 1 Fiber port Switch (RoHS)   |
| NSM-205PFT CR         | Multi-mode, ST Connector, 4-port 10/100 Mbps PoE (PSE) with 1 Fiber port Switch; metal case (RoHS)                                      |
| NSM-205PFC CR         | Multi-mode, SC Connector, 4-port 10/100 Mbps PoE (PSE) with 1 Fiber port Switch; metal case (RoHS)                                      |
| NSM-205PFCS CR        | Single-mode 30 km, SC Connector, 4-port 10/100 Mbps PoE (PSE) with 1 Fiber port Switch; metal case (RoHS)                               |
| NSM-205PFCS-60 CR     | Single-mode 60 km, SC Connector, 4-port 10/100 Mbps PoE (PSE) with 1 Fiber port Switch; metal case (RoHS)                               |
| NS-205PFT-24V CR      | Multi-mode, ST Connector, 4-port 10/100 Mbps PoE (PSE) with 1 Fiber port and +24 V <sub>DC</sub> Input Switch (RoHS)                    |
| NS-205PFC-24V CR      | Multi-mode, SC Connector, 4-port 10/100 Mbps PoE (PSE) with 1 Fiber port and +24 V <sub>DC</sub> Input Switch (RoHS)                    |
| NS-205PFCS-24V CR     | Single-mode 30 km, SC Connector, 4-port 10/100 Mbps PoE (PSE) with 1 Fiber port and +24 V <sub>DC</sub> Input Switch (RoHS)             |
| NS-205PFCS-60-24V CR  | Single-mode 60 km, SC Connector, 4-port 10/100 Mbps PoE (PSE) with 1 Fiber port and +24 V <sub>DC</sub> Input Switch (RoHS)             |
| NSM-205PFT-24V CR     | Multi-mode, ST Connector, 4-port 10/100 Mbps PoE (PSE) with 1 Fiber port and +24 V <sub>DC</sub> Input Switch; metal case (RoHS)        |
| NSM-205PFC-24V CR     | Multi-mode, SC Connector, 4-port 10/100 Mbps PoE (PSE) with 1 Fiber port and +24 V <sub>DC</sub> Input Switch; metal case (RoHS)        |
| NSM-205PFCS-24V CR    | Single-mode 30 km, SC Connector, 4-port 10/100 Mbps PoE (PSE) with 1 Fiber port and +24 V <sub>DC</sub> Input Switch; metal case (RoHS) |
| NSM-205PFCS-60-24V CR | Single-mode 60 km, SC Connector, 4-port 10/100 Mbps PoE (PSE) with 1 Fiber port and +24 V <sub>DC</sub> Input Switch; metal case (RoHS) |

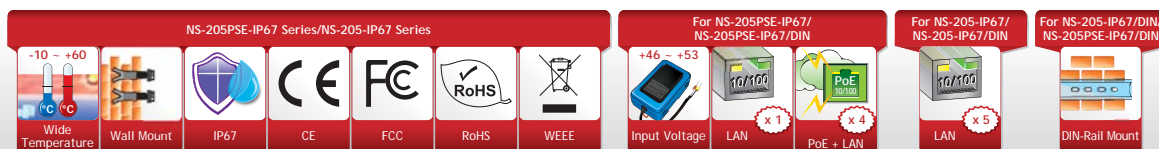
## Accessories

|              |   |
|--------------|---|
| DR-120-24    | 24V/5 A, 120 W Single Output Industrial DIN Rail Power Supply |
| MDR-60-24    | 24V/2.5A, 60 W Power Supply with DIN-Rail Mounting            |
| MDR-60-48    | 48 V/1.25 A, 60 W Power Supply with DIN-Rail Mounting         |
| DIN-KA52F-48 | 48 V/0.52 A, 25 W Power Supply with DIN-Rail Mounting         |
| KA52F-48     | 48 V/0.52 A, 25 W Power Supply                                |



NS-205PSE-IP67  
NS-205-IP67

NS-205PSE-IP67/DIN  
NS-205-IP67/DIN



### Features ▶▶▶

- Automatic MDI/MDI-X crossover for plug-and-play
- Store-and-forward architecture
- Each port supports both 10/100 Mbps speed auto negotiation
- Full duplex IEEE 802.3x and half duplex backpressure flow control
- Rugged RJ-45 connector for anti-vibration and shock
- IP67 grade protection approval
- 4 PoE ports with Power Sourcing Equipment (PSE) operation (NS-205PSE-IP67 series)
- Auto-detection of PD (powered devices) and automatic power management (NS-205PSE-IP67 series)
- Over-temperature, over-current and over/under-voltage detection (NS-205PSE-IP67 series)

### Introduction

The NS-205PSE-IP67/NS-205-IP67 is designed for industrial applications in harsh environments. The rugged RJ-45 ensure tight, robust connections, and guarantee reliable operation, even for applications that are subject to high vibration and shock.

The NS-205PSE-IP67 PoE switch provides 5 fast Ethernet with 4 IEEE 802.3af compliant PoE ports. The switch is classified as power source equipment (PSE) and provides up to 15.4 W of power per port.

The Ethernet switch supports IEEE 802.3/802.3u/802/3x with 10/100M, full/half-duplex, MDI/MDI-X auto-sensing, and provide an economical solution for your industrial Ethernet network.

### Comparison Table of 5/8-port IP67 Ethernet Switch

| Mode Name                         | NS-205-IP67                       | NS-205-IP67/DIN                    | NS-205PSE-IP67    | NS-205PSE-IP67/DIN                 | NS-208PSE-IP67                     | NS-208-IP67 |
|-----------------------------------|-----------------------------------|------------------------------------|-------------------|------------------------------------|------------------------------------|-------------|
| PoE                               | —                                 | —                                  | 802.3af x 4       | 802.3af x 4                        | 802.3af x 8                        | —           |
| Input Voltage Range               | +10 Vdc ~ +30 Vdc (1 kV Isolated) |                                    | +46 Vdc ~ +53 Vdc |                                    | +12 Vdc ~ +53 Vdc                  |             |
| Installation                      | Wall Mounting                     | DIN-Rail Mounting or Wall Mounting | Wall Mounting     | DIN-Rail Mounting or Wall Mounting | DIN-Rail Mounting or Wall Mounting |             |
| Dimensions (W x L x H) (Unit: mm) | 85 x 76 x 137                     | 89 x 90 x 138                      | 85 x 76 x 137     | 89 x 90 x 138                      | 190 x 155 x 104                    |             |

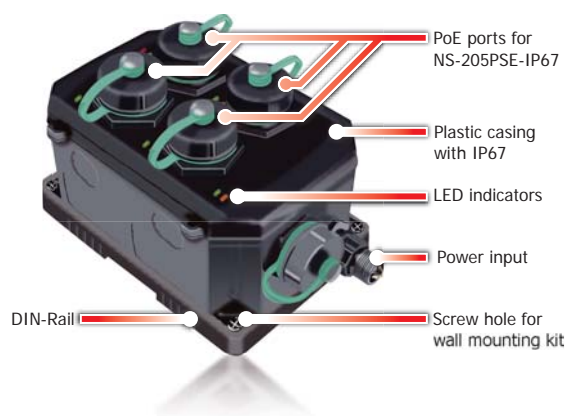
## Specifications

| Models                    | NS-205PSE-IP67  | NS-205PSE-IP67/DIN                 | NS-205-IP67   | NS-205-IP67/DIN                    |
|---------------------------|---|------------------------------------|---|------------------------------------|
| Technology                |   |                                    |   |                                    |
| Standards                 | IEEE 802.3, 802.3u, 802.3x, 10/100 Base-T(X) auto negotiation speed, F/H duplex mode, and auto MDI/MDI-X connection |                                    |   |                                    |
| Processing Type           | Store & forward; wire speed switching   |                                    |   |                                    |
| MAC Addresses             | 1024  |                                    |   |                                    |
| Memory Bandwidth          | 2 Gbps  |                                    | 1.4 Gbps  |                                    |
| Frame Buffer Memory       | 512 Kbit  |                                    | 256 Kbit  |                                    |
| Flow Control              | IEEE 802.3x flow control, back pressure flow control  |                                    |   |                                    |
| Interface                 |   |                                    |   |                                    |
| LED Indicators            | PWR, Link/Act , Power Device is detected  |                                    | PWR, 10/100M, Link/Act                                    |                                    |
| Ethernet Isolation        | 1500 V <sub>rms</sub> 1 minute  |                                    |   |                                    |
| Connector                 | Rugged RJ-45  |                                    |   |                                    |
| Power Input               |   |                                    |   |                                    |
| Input Voltage Range       | +46 V <sub>DC</sub> ~ +53 V <sub>DC</sub> for PoE output  |                                    | +10 V <sub>DC</sub> ~ +30 V <sub>DC</sub> (1 kV Isolated) |                                    |
| Power Consumption         | 0.05 A @ 48 V <sub>DC</sub> without PD loading; 1.45 A @ 48 V <sub>DC</sub> with PD full loading                    |                                    | 0.12 A @ 24 V <sub>DC</sub>                               |                                    |
| Protection                | Power reverse polarity protection   |                                    |   |                                    |
| Connector                 | IP67 PWR Plug   |                                    |   |                                    |
| PoE Technology            |   |                                    |   |                                    |
| PoE Compliance            | 100% IEEE 802.3af compliant   |                                    | —   |                                    |
| PoE Classification        | PSE (Power Sourcing Equipment)  |                                    | —   |                                    |
| PoE Voltage               | +48 V <sub>DC</sub> depending on power input  |                                    | —   |                                    |
| PoE Power                 | Up to 15.4 watts per channel  |                                    | —   |                                    |
| PoE Operation             | Automatic detection and power management  |                                    | —   |                                    |
| PoE Pin Assignments       | V+ (Pin 1, 2), V- (Pin 3, 6)  |                                    | —   |                                    |
| PoE Disconnect Mode       | DC disconnect   |                                    | —   |                                    |
| Mechanical                |   |                                    |   |                                    |
| Casing                    | Plastic (Flammability UL 94V-0)   |                                    |   |                                    |
| Environmental Rating      | Protection rating IP67 for Operating Temperature -10 °C ~ +60 °C  |                                    |   |                                    |
|                           | Protection rating IP66 for Operating Temperature -40 °C ~ +75 °C  |                                    |   |                                    |
| Dimensions (W x L x H)    | 85 mm x 76 mm x 137 mm  | 89 mm x 90 mm x 138 mm             | 85 mm x 76 mm x 137 mm                                    | 89 mm x 90 mm x 138 mm             |
| Installation              | Wall mounting   | DIN-Rail Mounting or Wall Mounting | Wall mounting   | DIN-Rail Mounting or Wall Mounting |
| Environment               |   |                                    |   |                                    |
| Operating Temperature     | -10 °C ~ +60 °C (Protection rating IP67)  |                                    |   |                                    |
|                           | -40 °C ~ +75 °C (Protection rating IP66)  |                                    |   |                                    |
| Storage Temperature       | -10 °C ~ +60 °C (Protection rating IP67)  |                                    |   |                                    |
|                           | -40 °C ~ +75 °C (Protection rating IP66)  |                                    |   |                                    |
| Ambient Relative Humidity | 100% RH for Operating Temperature -10 °C ~ +60 °C   |                                    |   |                                    |
|                           | 10% ~ 90% RH, non-condensing for Operating Temperature -40 °C ~ +75 °C  |                                    |   |                                    |

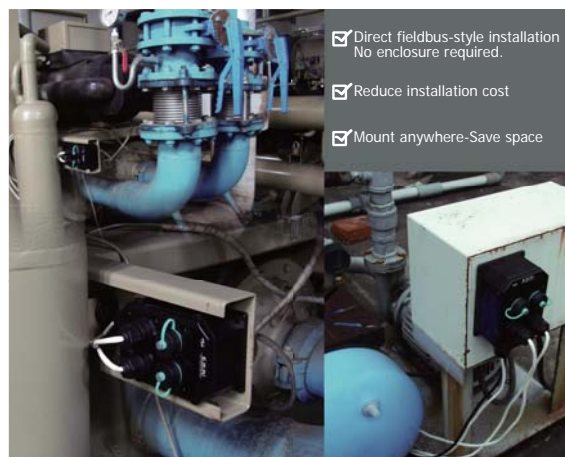
3

Unmanaged Ethernet Switches

## Appearance



## Applications





# Industrial IP67 5-port Unmanaged Ethernet Switch

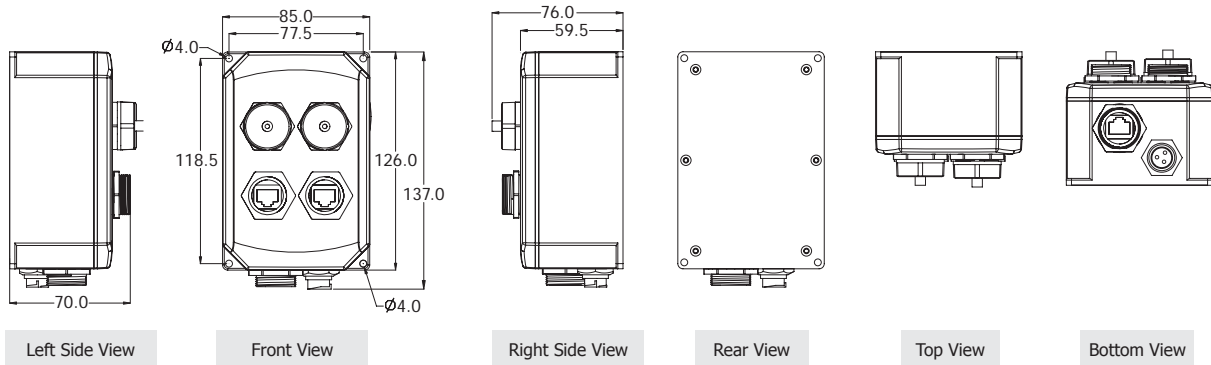
**POE**

- NS-205PSE-IP67
- NS-205PSE-IP67/DIN
- NS-205-IP67
- NS-205-IP67/DIN

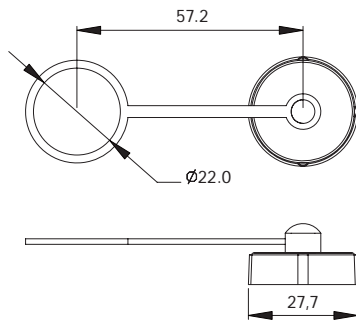
IP67 grade protection approval  
Rugged RJ-45 connector for anti-vibration and shock

## Dimensions (Units: mm)

### NS-205PSE-IP67/NS-205-IP67

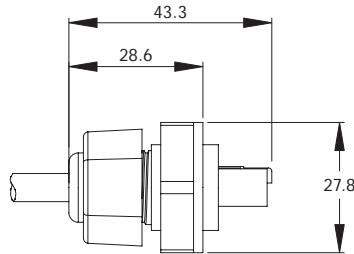


### IP67 Ethernet Cap with Tether



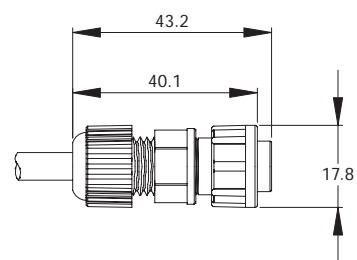
### IP67 Ethernet Plug

Cable Dia:  
Max. 7.0 mm  
Min. 5.5 mm



### IP67 PWR Plug

Cable Dia:  
Max. 6.5 mm  
Min. 5.0 mm



## Ordering Information

|                       |  |
|-----------------------|--|
| NS-205PSE-IP67 CR     | Industrial 5-port unmanaged IP67 Ethernet switch with PoE<br>Includes IP67 RJ-45 Plug x 5, IP67 Power Plug x 1, Cap with Tether x 5 (RoHS) |
| NS-205PSE-IP67/DIN CR | NS-205PSE-IP67 with DIN-Rail Mounting (RoHS)   |
| NS-205-IP67 CR        | Industrial 5-port unmanaged IP67 Ethernet switch<br>Includes IP67 RJ-45 Plug x 5, IP67 Power Plug x 1, Cap with Tether x 5 (RoHS)          |
| NS-205-IP67/DIN CR    | NS-205-IP67 with DIN-Rail Mounting (RoHS)  |

## Accessories

|              |   |
|--------------|---|
| MDR-60-48    | 48 V/1.25 A, 60 W Power Supply with DIN-Rail Mounting |
| DIN-KA52F-48 | 48 V/0.52 A, 25 W Power Supply with DIN-Rail Mounting |
| DR-120-48    | 48 V/2.5 A, 120 W Power Supply with DIN-Rail Mounting |

|   |   |  |
|---|---|--|
| <p>IP67 RJ-45 Plug</p> <p>4SASO-001</p> | <p>IP67 Power Plug</p> <p>4SIO1K0000016</p> | <p>Cap with Tether</p> <p>4SASO-0004</p> |
|---|---|--|

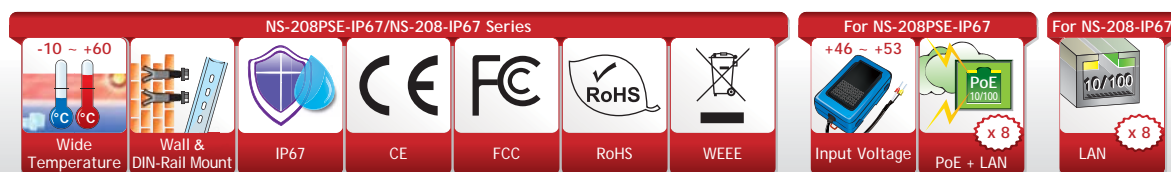


# NS-208PSE-IP67 *Available soon*

Industrial 8-port Unmanaged IP67 Ethernet Switch with PoE

# NS-208-IP67 *NEW*

Industrial 8-port Unmanaged IP67 Ethernet Switch



## Features ▶▶▶

- Automatic MDI/MDI-X crossover for plug-and-play
- Store-and-forward architecture
- Each port supports both 10/100 Mbps speed auto negotiation
- Full duplex IEEE 802.3x and half duplex backpressure flow control
- Rugged RJ-45 connector for anti-vibration and shock
- IP67 grade protection approval
- 8 PoE ports with Power Sourcing Equipment (PSE) operation (NS-208PSE-IP67 series)
- Auto-detection of PD (powered devices) and automatic power management (NS-208PSE-IP67 series)
- Over-temperature, over-current and over/under-voltage detection (NS-208PSE-IP67 series)

## Introduction

The NS-208PSE-IP67/NS-208-IP67 is designed for industrial applications in harsh environments. The rugged RJ-45 ensures tight, robust connections, and guarantees reliable operation, even for applications that are subject to high vibration and shock.

The NS-208PSE-IP67 PoE switch provides 8 fast Ethernet with 8 IEEE 802.3af compliant PoE ports. The switch is classified as power source equipment (PSE) and provide up to 15.4 W of power per port.

The Ethernet switch supports IEEE 802.3/802.3u/802/3x with 10/100M, full/half-duplex, MDI/MDI-X auto-sensing, and provides an economical solution for your industrial Ethernet network.

## Comparison Table of 5/8-port IP67 Ethernet Switch

| Mode Name                         | NS-205-IP67                       | NS-205-IP67/DIN                    | NS-205PSE-IP67    | NS-205PSE-IP67/DIN                 | NS-208PSE-IP67                     | NS-208-IP67       |
|-----------------------------------|-----------------------------------|------------------------------------|-------------------|------------------------------------|------------------------------------|-------------------|
| PoE                               | —                                 | —                                  | 802.3af x 4       | 802.3af x 4                        | 802.3af x 8                        | —                 |
| Input Voltage Range               | +10 Vdc ~ +30 Vdc (1 kV Isolated) |                                    | +46 Vdc ~ +53 Vdc |                                    |                                    | +12 Vdc ~ +53 Vdc |
| Installation                      | Wall Mounting                     | DIN-Rail Mounting or Wall Mounting | Wall Mounting     | DIN-Rail Mounting or Wall Mounting | DIN-Rail Mounting or Wall Mounting |                   |
| Dimensions (W x L x H) (Unit: mm) | 85 x 76 x 137                     | 89 x 90 x 138                      | 85 x 76 x 137     | 89 x 90 x 138                      | 190 x 155 x 104                    |                   |

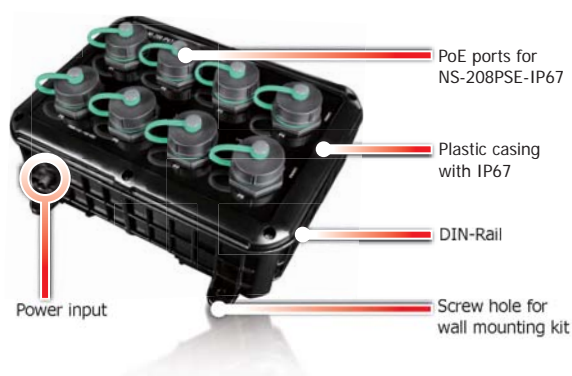
## Specifications

| Models                    | NS-208PSE-IP67  |  | NS-208-IP67                               |  |
|---------------------------|---|--|---|--|
| Technology                |   |  |   |  |
| Standards                 | IEEE 802.3, 802.3u, 802.3x, 10/100 Base-T(X) auto negotiation speed, F/H duplex mode, and auto MDI/MDI-X connection |  |   |  |
| 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                 |   |  |   |  |
| LED Indicators            | PWR, Link/Act , Power Device is detected  |  | PWR, Link/Act                             |  |
| Ethernet Isolation        | 1500 V <sub>rms</sub> 1 minute  |  |   |  |
| Connector                 | Rugged RJ-45  |  |   |  |
| Power Input               |   |  |   |  |
| Input Voltage Range       | +46 V <sub>DC</sub> ~ +53 V <sub>DC</sub> for PoE output  |  | +12 V <sub>DC</sub> ~ +53 V <sub>DC</sub> |  |
| Power Consumption         | 0.05 A @ 48 V <sub>DC</sub> without PD loading; 1.45 A @ 48 V <sub>DC</sub> with PD full loading                    |  | 0.12 A @ 24 V <sub>DC</sub>               |  |
| Protection                | Power reverse polarity protection   |  |   |  |
| Connector                 | IP67 PWR Plug   |  |   |  |
| PoE Technology            |   |  |   |  |
| PoE Compliance            | 100% IEEE 802.3af compliant   |  | —   |  |
| PoE Classification        | PSE (Power Sourcing Equipment)  |  | —   |  |
| PoE Voltage               | +48 V <sub>DC</sub> depending on power input  |  | —   |  |
| PoE Power                 | Up to 15.4 watts per channel  |  | —   |  |
| PoE Operation             | Automatic detection and power management  |  | —   |  |
| PoE Pin Assignments       | V+ (Pin 1, 2), V- (Pin 3, 6)  |  | —   |  |
| PoE Disconnect Mode       | DC disconnect   |  | —   |  |
| Mechanical                |   |  |   |  |
| Casing                    | Plastic (Flammability UL 94V-0)   |  |   |  |
| Environmental Rating      | Protection rating IP67 for Operating Temperature -10 °C ~ +60 °C  |  |   |  |
|                           | Protection rating IP66 for Operating Temperature -40 °C ~ +75 °C  |  |   |  |
| Dimensions (W x L x H)    | 190 mm x 155 mm x 104 mm  |  |   |  |
| Installation              | DIN-Rail Mounting or Wall Mounting  |  |   |  |
| Environment               |   |  |   |  |
| Operating Temperature     | -10 °C ~ +60 °C (Protection rating IP67)  |  |   |  |
|                           | -40 °C ~ +75 °C (Protection rating IP66)  |  |   |  |
| Storage Temperature       | -10 °C ~ +60 °C (Protection rating IP67)  |  |   |  |
|                           | -40 °C ~ +75 °C (Protection rating IP66)  |  |   |  |
| Ambient Relative Humidity | 100% RH for Operating Temperature -10 °C ~ +60 °C   |  |   |  |
|                           | 10% ~ 90% RH, non-condensing for Operating Temperature -40 °C ~ +75 °C  |  |   |  |

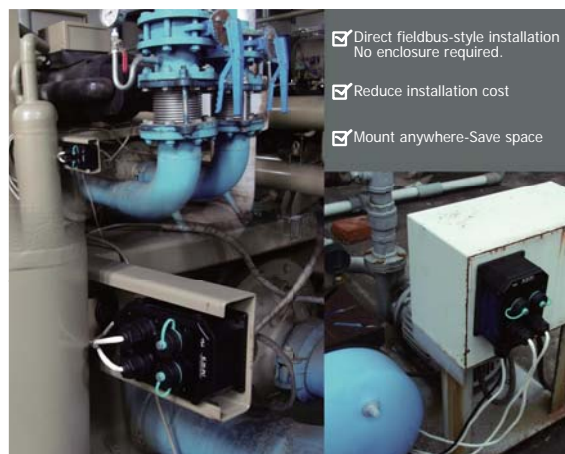
3

Unmanaged Ethernet Switches

## Appearance



## Applications





# Industrial IP67 8-port Unmanaged Ethernet Switch

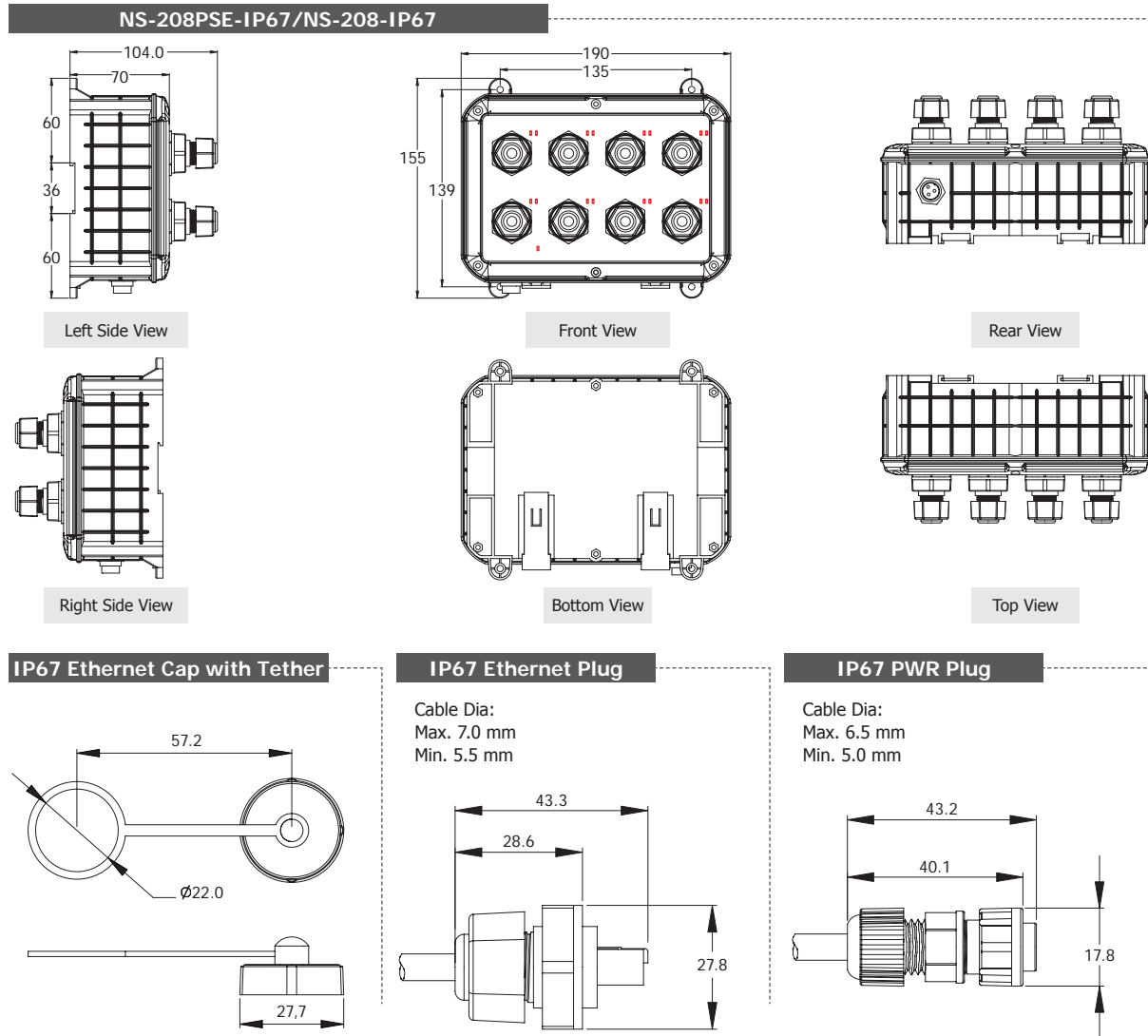
- NS-208-IP67
- NS-208PSE-IP67

PoE



IP67 grade protection approval  
Rugged RJ-45 connector for anti-vibration and shock

## Dimensions (Units: mm)



## Ordering Information

|                   |  |
|-------------------|--|
| NS-208PSE-IP67 CR | Industrial 8-port unmanaged IP67 Ethernet switch with PoE<br>Includes IP67 RJ-45 Plug x 8, IP67 Power Plug x 1, Cap with Tether x 8 (RoHS) |
| NS-208-IP67 CR    | Industrial 8-port unmanaged IP67 Ethernet switch<br>Includes IP67 RJ-45 Plug x 8, IP67 Power Plug x 1, Cap with Tether x 8 (RoHS)          |

## Accessories

|              |   |
|--------------|---|
| MDR-60-48    | 48 V/1.25 A, 60 W Power Supply with DIN-Rail Mounting |
| DIN-KA52F-48 | 48 V/0.52 A, 25 W Power Supply with DIN-Rail Mounting |
| DR-120-48    | 48 V/2.5 A, 120 W Power Supply with DIN-Rail Mounting |

|   |   |  |
|---|---|--|
| <p>IP67 RJ-45 Plug</p> <p>4SASO-001</p> | <p>IP67 Power Plug</p> <p>4SIO1K0000016</p> | <p>Cap with Tether</p> <p>4SASO-0004</p> |
|---|---|--|



# NSM-208-M12 NEW

EN50155 8-port M12 Unmanaged Ethernet Switch

# NSM-208PSE-M12 NEW

EN50155 8-port M12 Unmanaged PoE Ethernet Switch

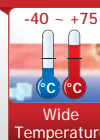
NSM-208-M12



NSM-208PSE-M12



NSM-208-M12/NSM-208PSE-M12 Series



## Features ▶▶▶

- Each port supports both 10/100 Mbps speed auto negotiation
- 8 PoE ports with Power Sourcing Equipment (PSE) operation (NSM-208PSE-M12)
- Over-temperature, over-current and over/under-voltage detection (NSM-208PSE-M12)
- 8-port 10/100 Mbps M12 type connector with IP40 protection
- Full duplex IEEE 802.3x and half duplex backpressure flow control
- EN50155-certified for harsh railway standards
- Automatic MDI/MDI-X crossover for plug-and-play
- Store-and-forward architecture
- Auto-detection of PD (powered devices) and automatic power management (NSM-208PSE-M12)
- Supports operating temperatures from -40 °C ~ +75 °C

## Introduction

The NSM-208PSE-M12/NSM-208-M12 is designed for industrial applications in harsh environments. The M12 connectors ensure tight, robust connections, and guarantees reliable operation, even for applications that are subject to high vibration and shock.

The NSM-208PSE-M12 PoE switch provides 8 fast Ethernet M12 ports with 8 IEEE 802.3af compliant PoE ports. The switch is classified as power source equipment (PSE) and provide up to 15.4 W of power per port.

The Ethernet switch supports IEEE 802.3/802.3u/802.3x with 10/100M, full/half-duplex, MDI/MDI-X auto-sensing, and provides an economical solution for your industrial Ethernet network.

The NSM-208-M12 provides a wide +12 V<sub>DC</sub> ~ +53 V<sub>DC</sub> power range to fit all the common power standards found in industrial automation, without external power converters. The wide power input lowers installation and maintenance costs.

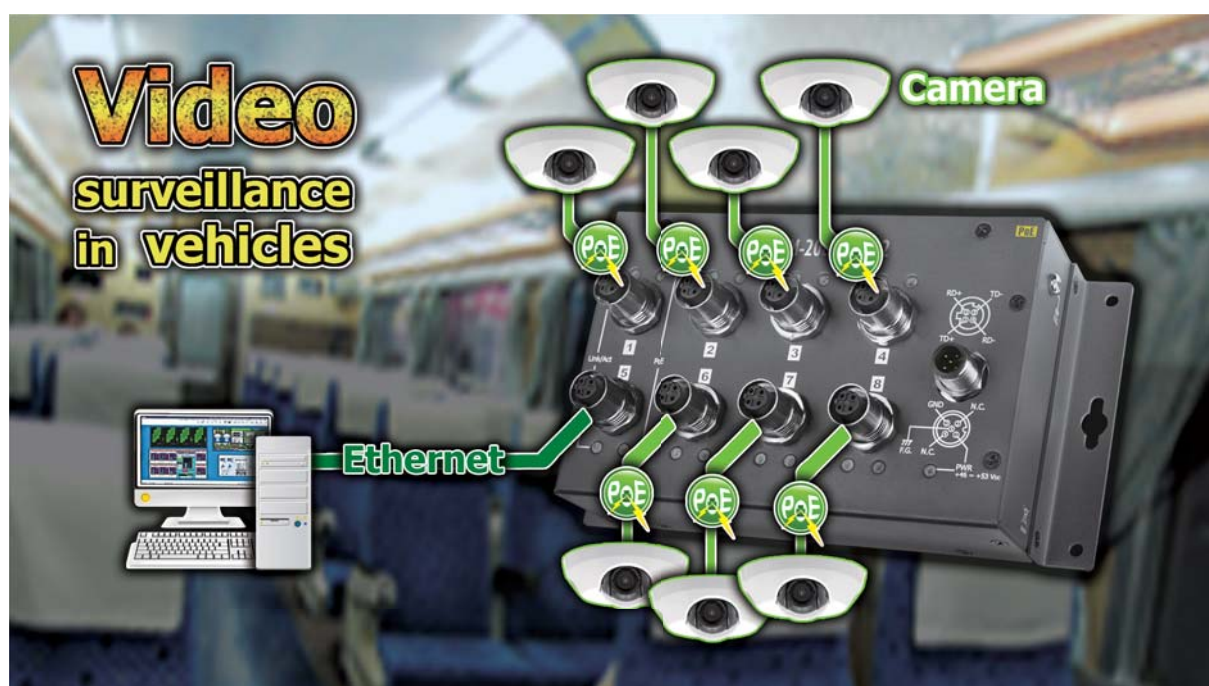
## Comparison Table of 8-port M12/IP67 Ethernet Switch

| Mode Name              | NSM-208PSE-M12                            | NSM-208-M12                               | NS-208PSE-IP67                            | NS-208-IP67                               |
|------------------------|---|---|---|---|
| PoE                    | 802.3af x 8                               | —   | 802.3af x 8                               | —   |
| Input Voltage Range    | +46 V <sub>DC</sub> ~ +53 V <sub>DC</sub> | +12 V <sub>DC</sub> ~ +53 V <sub>DC</sub> | +46 V <sub>DC</sub> ~ +53 V <sub>DC</sub> | +12 V <sub>DC</sub> ~ +53 V <sub>DC</sub> |
| Operating Temperature  | -40 °C ~ +75 °C                           | -40 °C ~ +75 °C                           | -10 °C ~ +60 °C                           | -10 °C ~ +60 °C                           |
| Casing                 | Metal with IP40                           | Metal with IP40                           | Plastic (Flammability UL 94V-0) with IP67 | Plastic (Flammability UL 94V-0) with IP67 |
| Installation           | Wall Mounting                             | Wall Mounting                             | DIN-Rail Mounting or Wall Mounting        | DIN-Rail Mounting or Wall Mounting        |
| Dimensions (W x L x H) | 190 mm x 56 mm x 100 mm                   | 190 mm x 56 mm x 100 mm                   | 190 mm x 155 mm x 104 mm                  | 190 mm x 155 mm x 104 mm                  |

## Specifications

| Models                    | NSM-208PSE-M12  |  | NSM-208-M12                               |
|---------------------------|---|--|---|
| Technology                |   |  |   |
| Standards                 | IEEE 802.3, 802.3u, 802.3x, 10/100 Base-T(X) auto negotiation speed, F/H duplex mode, and auto MDI/MDI-X connection |  |   |
| Processing Type           | Store & forward   |  |   |
| MAC Addresses             | 1024  |  |   |
| Memory Bandwidth          | 3.2 Gbps  |  |   |
| Frame Buffer Memory       | 512 Kbit  |  |   |
| Flow Control              | IEEE 802.3x flow control, back pressure flow control  |  |   |
| Interface                 |   |  |   |
| LED Indicators            | PWR, Link/Act, Power Device is detected   |  | PWR, Link/Act                             |
| Ethernet Isolation        | 1500 V <sub>rms</sub> 1 minute  |  |   |
| Connector                 | Female 4-Pin shielded M12 D-coding connector x 8  |  |   |
| Power Input               |   |  |   |
| Input Voltage Range       | +46 V <sub>DC</sub> ~ +53 V <sub>DC</sub>   |  | +12 V <sub>DC</sub> ~ +53 V <sub>DC</sub> |
| Power Consumption         | 0.12 A @ 48 V <sub>DC</sub> without PD loading<br>3.0 A @ 48 V <sub>DC</sub> with PD full loading                   |  | 0.12 A @ 48 V <sub>DC</sub>               |
| Protection                | Power reverse polarity protection   |  |   |
| Connector                 | Male 5-Pin shielded M12 A-coding connector x 1  |  |   |
| PoE Technology            |   |  |   |
| PoE Compliance            | 100% IEEE 802.3af compliant   |  | –   |
| PoE Classification        | PSE (Power Sourcing Equipment)  |  | –   |
| PoE Voltage               | +48 V <sub>DC</sub> depending on power input  |  | –   |
| PoE Power                 | Up to 15.4 W per port   |  | –   |
| PoE Operation             | Automatic detection and power management  |  | –   |
| PoE Pin Assignments       | V+ (Pin 1, 3), V- (Pin 2, 4)  |  | –   |
| PoE Disconnect Mode       | DC disconnect   |  | –   |
| Mechanical                |   |  |   |
| Casing                    | Metal with IP40   |  |   |
| Dimensions (W x L x H)    | 190 mm x 56 mm x 100 mm   |  |   |
| Installation              | Wall Mounting   |  |   |
| Environmental             |   |  |   |
| Operating Temperature     | -40 °C ~ +75 °C   |  |   |
| Storage Temperature       | -40 °C ~ +85 °C   |  |   |
| Ambient Relative Humidity | 10 ~ 95% RH, non-condensing   |  |   |

## Applications





# EN50155 8-port M12 Unmanaged Ethernet Switch

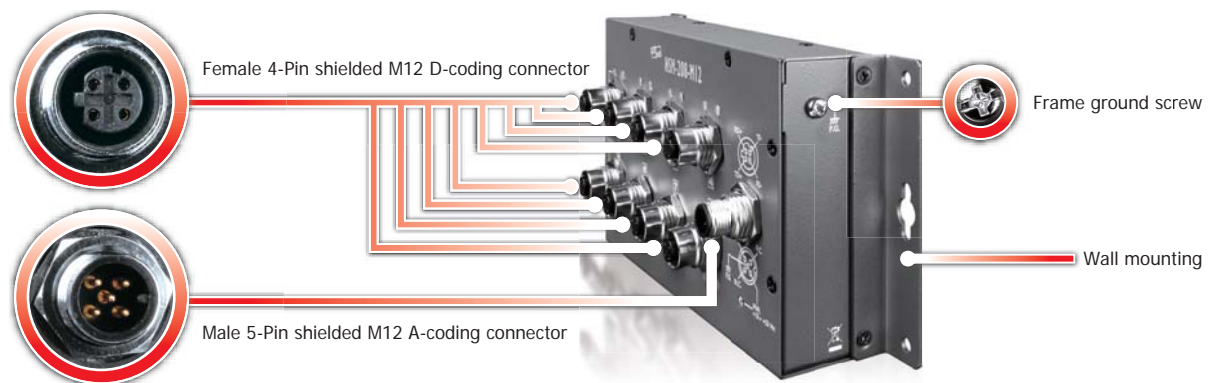
- NSM-208-M12
- NSM-208PSE-M12



Wide Range Temperature:  $-40^{\circ}\text{C} \sim +75^{\circ}\text{C}$   
EN50155-certified for harsh railway standard



## Appearance



## Pin Functions for Power Input

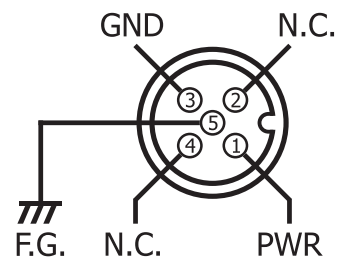
External power supply is connected using the M12 A-coding:

PWR: Power input and should be connected to the power supply (+)

GND: Ground and should be connected to the power supply (-)

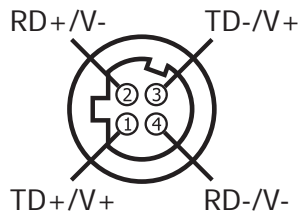
F.G.: F.G. stands for Frame Ground (protective ground). It is optional.

If you use this pin, it can reduce EMI radiation; improve EMI performance and EMS protection.

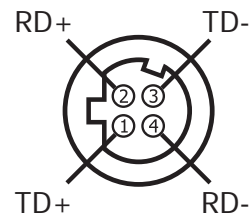


## Pin Functions for Ethernet Port

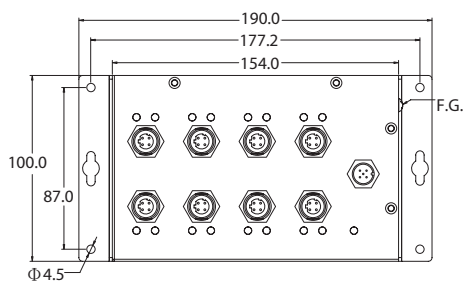
For NSM-208PSE-M12



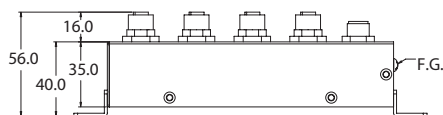
For NSM-208-M12



## Dimensions (Units: mm)



Front View



Bottom View

## Ordering Information

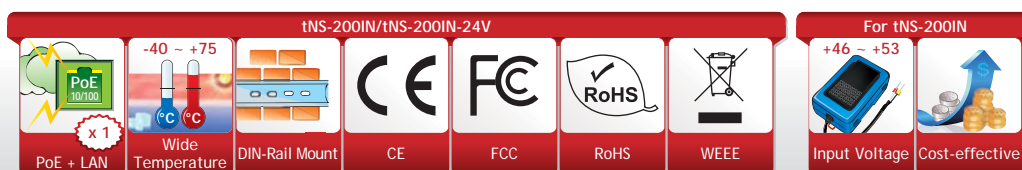
|                   |   |
|-------------------|---|
| NSM-208-M12 CR    | EN50155 8-port M12 Unmanaged Ethernet Switch (RoHS)<br>Includes M12D-4P-IP68 x 8, A-CAP-M12M x 8, M12A-5P-IP68 and A-CAP-M12F x 1     |
| NSM-208PSE-M12 CR | EN50155 8-port M12 Unmanaged PoE Ethernet Switch (RoHS)<br>Includes M12D-4P-IP68 x 8, A-CAP-M12M x 8, M12A-5P-IP68 and A-CAP-M12F x 1 |

## Accessories

|              |   |
|--------------|---|
| MDR-60-48    | 48 V/1.25 A, 60 W Power Supply with DIN-Rail Mounting |
| DIN-KA52F-48 | 48 V/0.52 A, 25 W Power Supply with DIN-Rail Mounting |
| KA52F-48     | 48 V/0.52 A, 25 W Power Supply                        |

|  |               |               |               |
|--|---------------|---------------|---------------|
| M12D-4P-IP68   | A-CAP-M12M    | M12A-5P-IP68  | A-CAP-M12F    |
| 4PIO1K0000001  | 4PIO1K0000002 | 4PIO1K0000003 | 4PIO1K0000004 |
| You need to choose high quality M12 cable, please refer to <a href="http://www.balluff.ca/Balluff">http://www.balluff.ca/Balluff</a> |               |               |               |





## Features ▶▶▶

- Auto-detection of PD (powered devices)
- Over-temperature, over-current and over/under-voltage detection
- No user settings
- Power Sourcing Equipment (PSE) operation
- Supplies up to 15.4 W
- Tiny packaging fits on your DIN-Rail Mounting
- Cost-effective for tNS-200IN

## Introduction

The tNS-200IN/tNS-200IN-24V Single Port PoE Injector supports PoE powered devices in industrial environments. The tNS-200IN/tNS-200IN-24V delivers both data and power over a single standard Ethernet cable to a PoE Powered Device designed to receive both Data and Power through its RJ-45 port connector.

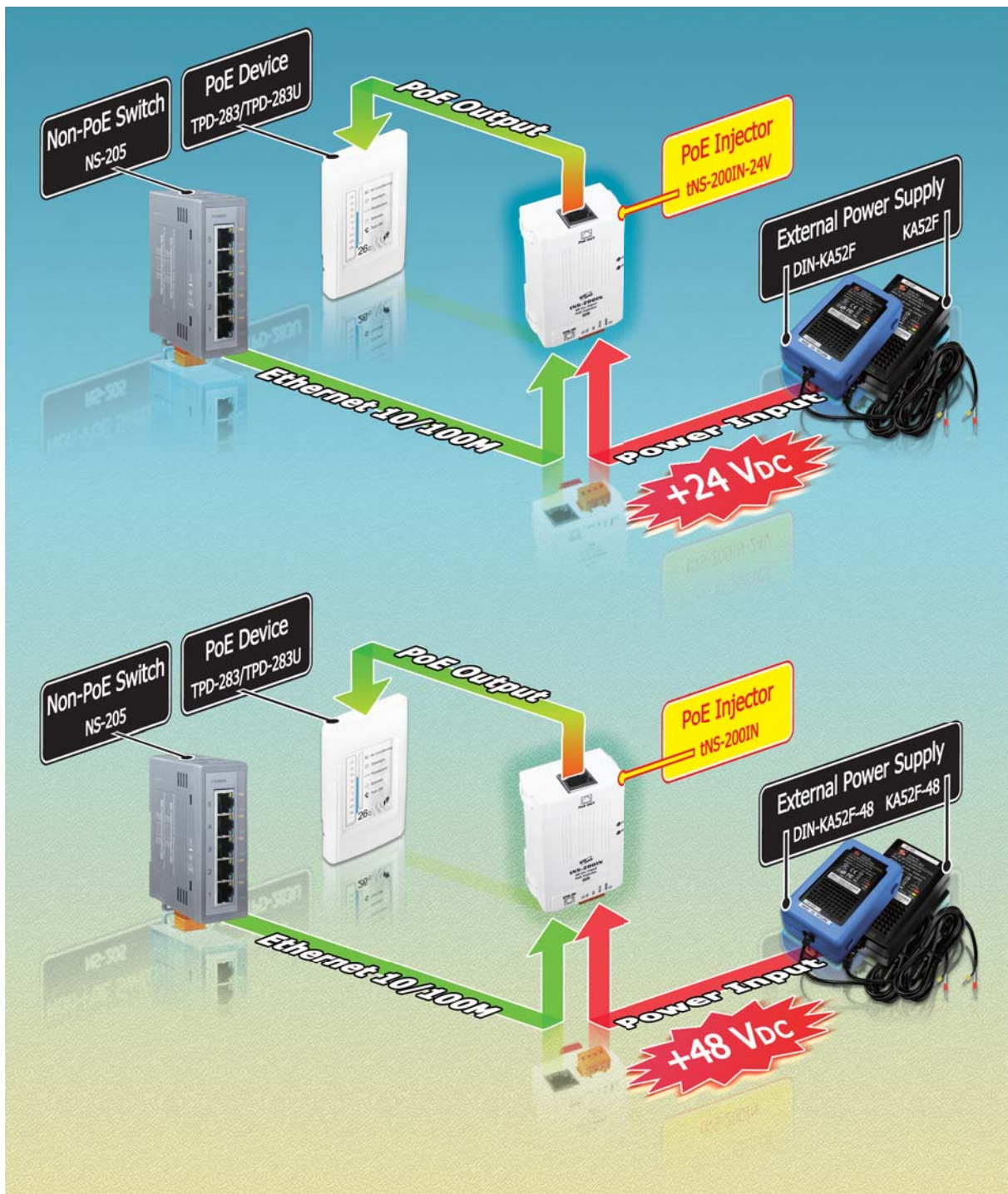
The tNS-200IN-24V is designed with +24 V<sub>DC</sub> to +48 V<sub>DC</sub> boost for PoE application where +48 V<sub>DC</sub> power supply is not available.

## Specifications

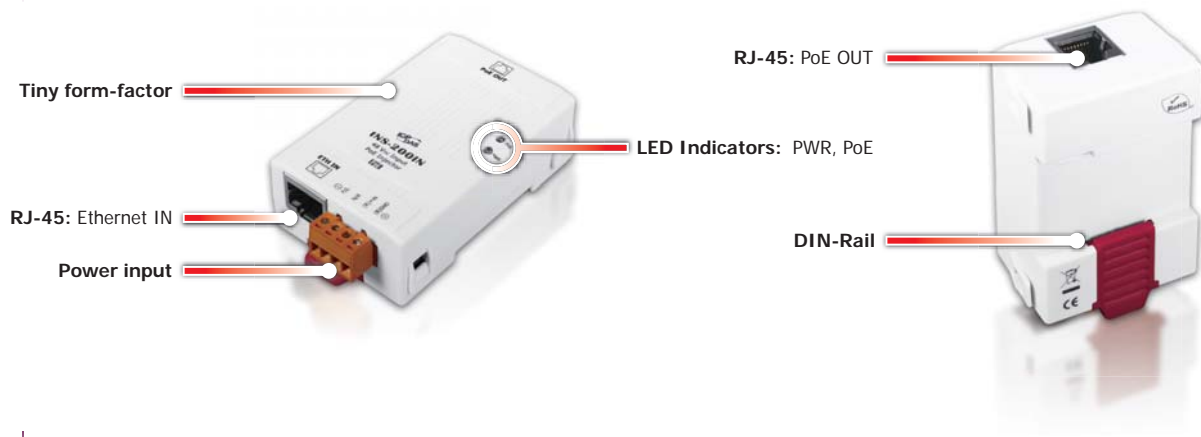
| Models                          | tNS-200IN                                       | tNS-200IN-24V                                   |
|---------------------------------|---|---|
| Interface                       |   |   |
| RJ-45 Ports                     | 1 for Ethernet in, 1 for PoE out                |   |
| LED Indicators                  | Power, Power Device is detected                 |   |
| Power Input                     |   |   |
| Input Voltage Range             | +46 V <sub>DC</sub> ~ +53 V <sub>DC</sub>       | +18 V <sub>DC</sub> ~ +32 V <sub>DC</sub>       |
| Power Consumption               | 0.4 A @ 48 V <sub>DC</sub> with PD full loading | 0.9 A @ 24 V <sub>DC</sub> with PD full loading |
| Protection                      | Power reverse polarity protection               |   |
| Frame Ground for EMS Protection | Yes   |   |
| Connector                       | 4-Pin Removable Terminal Block                  |   |
| PoE Technology                  |   |   |
| PoE Compliance                  | 100% IEEE 802.3af compliant                     |   |
| PoE Classification              | PSE (Power Sourcing Equipment)                  |   |
| PoE Voltage                     | +48 V <sub>DC</sub> depending on power input    |   |
| PoE Power                       | Up to 15.4 W                                    |   |
| PoE Operation                   | Automatic detection and power management        |   |
| PoE Pin Assignments             | V+ (Pin 4, 5), V- (Pin 7, 8)                    |   |
| PoE Disconnect Mode             | DC disconnect                                   |   |

| Models                    | tNS-200IN                       | tNS-200IN-24V |
|---------------------------|---------------------------------|---------------|
| Mechanical                |                                 |               |
| Casing                    | Plastic (Flammability UL 94V-0) |               |
| Dimensions (W x L x H)    | 52 mm x 27 mm x 86 mm           |               |
| Installation              | DIN-Rail Mounting               |               |
| Environmental             |                                 |               |
| Operating Temperature     | -40 °C ~ +75 °C                 |               |
| Storage Temperature       | -40 °C ~ +85 °C                 |               |
| Ambient Relative Humidity | 10 ~ 90% RH, non-condensing     |               |

## Applications



## Appearance



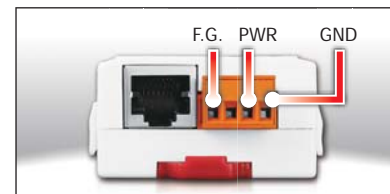
## Pin Function for Terminal Block

External power supply is connected using the removable terminal block:

**PWR:** Power input and should be connected to the power supply (+)

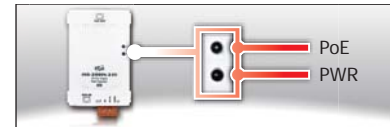
**GND:** Ground and should be connected to the power supply (-)

**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.

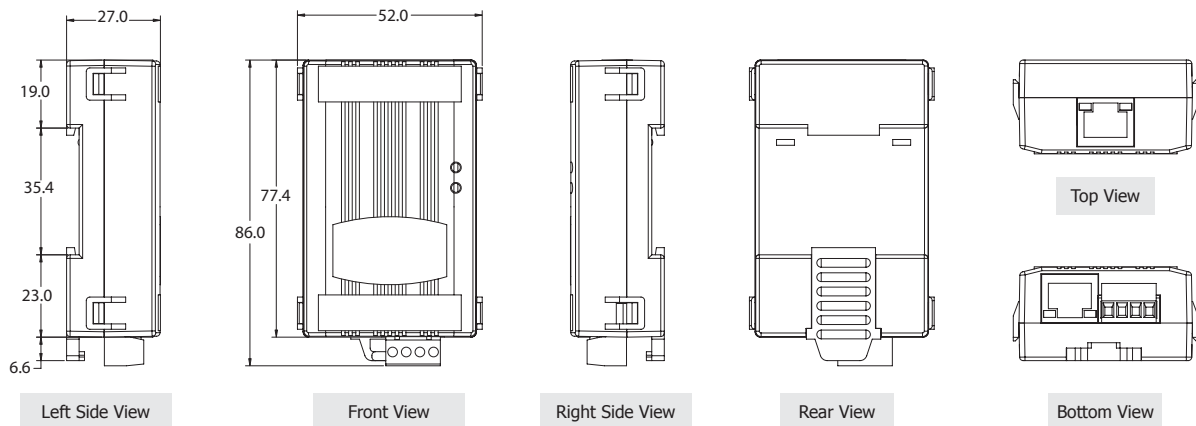


## LED Indicator Functions

| LED | Color     | Description              |
|-----|-----------|--------------------------|
| PoE | Orange On | Power Device is detected |
| PWR | Red On    | Power is On              |
|     | Red Off   | Power is Off             |



## Dimensions (Units: mm)



## Ordering Information

|                  |   |
|------------------|---|
| tNS-200IN CR     | PoE injector for 1 PoE port (uses spare pairs), +48 Vdc input (RoHS)  |
| tNS-200IN-24V CR | PoE injector for 1 PoE port (uses unused pairs), +24 Vdc input (RoHS) |

## Accessories

|              |   |
|--------------|---|
| MDR-60-48    | 48 V/1.25 A, 60 W Power Supply with DIN-Rail Mounting |
| DIN-KA52F-48 | 48 V/0.52 A, 25 W Power Supply with DIN-Rail Mounting |
| DIN-KA52F    | 24 V/1.04 A, 25 W Power Supply with DIN-Rail Mounting |