ICP DAS

# NS-205AF Series/NSM-205AF Series *Available soon*

4-port 10/100 Mbps Ethernet with 1 Fiber Port Switch

# NS-206AF Series/NSM-206AF Series *NEW*

4-port 10/100 Mbps Ethernet with 2 Fiber Ports Switch

| NS-205AFC-T/FCS-T/FCS-60T | NS-206AFT-T | NSM-205AFC-T/FCS-T/FCS-60T | NSM-206AFT-T |

**NS(M)-205AF/NS(M)-206AF Series**

| LAN x 4 | Wide Temperature -30 ~ +75 | DIN-Rail Mount | Wide Input Voltage +12 ~ +48 | CE | FCC | RoHS | WEEE | For NS(M)-205AF 100Base-FX Fiber Optic x 1 | For NS(M)-206AF 100Base-FX Fiber Optic x 2 |
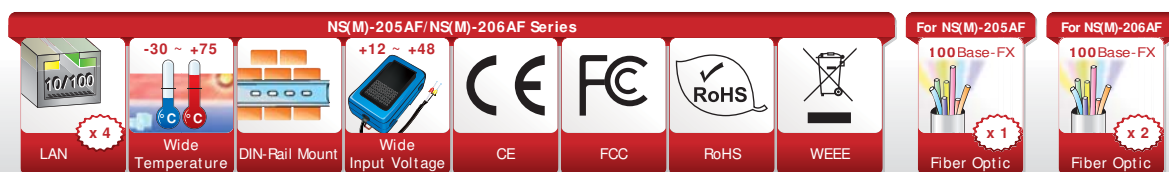
## Features ▶▶▶▶

- 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 $V_{DC}$ ~ +48 $V_{DC}$ 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 $V_{DC}$ ~ +48 $V_{DC}$ 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 $V_{DC}$ ~ +30 $V_{DC}$ | | +12 $V_{DC}$ ~ +48 $V_{DC}$ | |
| 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 $V_{rms}$ 1 minute | | | |
| **+/-4 kV ESD Protection** | Yes | | | |
| **Fiber Interface (100 Base-FX; SC/ST type)** | | | | |
| **Multi-Mode** NS-205AFT-T NS-205AFC-T NSM-205AFT-T NSM-205AFC-T NS-206AFT-T NS-206AFC-T NSM-206AFT-T NSM-206AFC-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 | | | |
| **Single-Mode** NS-205AFCS-T NSM-205AFCS-T NS-206AFCS-T NSM-206AFCS-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 | | | |
| **Single-Mode** NS-205AFCS-60T NSM-205AFCS-60T NS-206AFCS-60T NSM-206AFCS-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 | | | |
| **Power Input** | | | | |
| **Input Voltage Range** | +12 $V_{DC}$ ~ +48 $V_{DC}$ (Redundant input) | | | |
| **Power Consumption** | 0.2 A @ 24 $V_{DC}$ | 0.14 A @ 24 $V_{DC}$ | 0.2 A @ 24 $V_{DC}$ | 0.14 A @ 24 $V_{DC}$ |
| **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 | | | |

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Unmanaged Ethernet Switches

## 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.
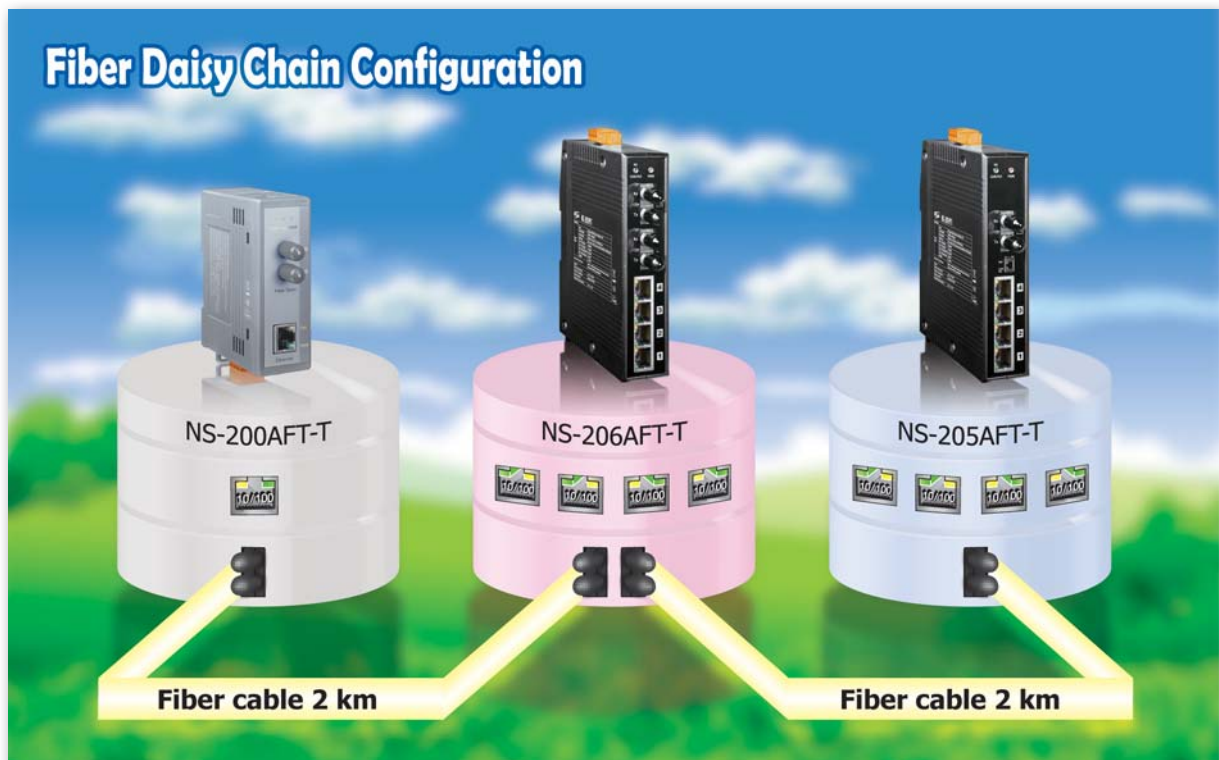


Relay Output

PWR2

PWR1

Alarm

NSM-206AF Series

+24 V_DC Power Supply

Back-up Power Supply
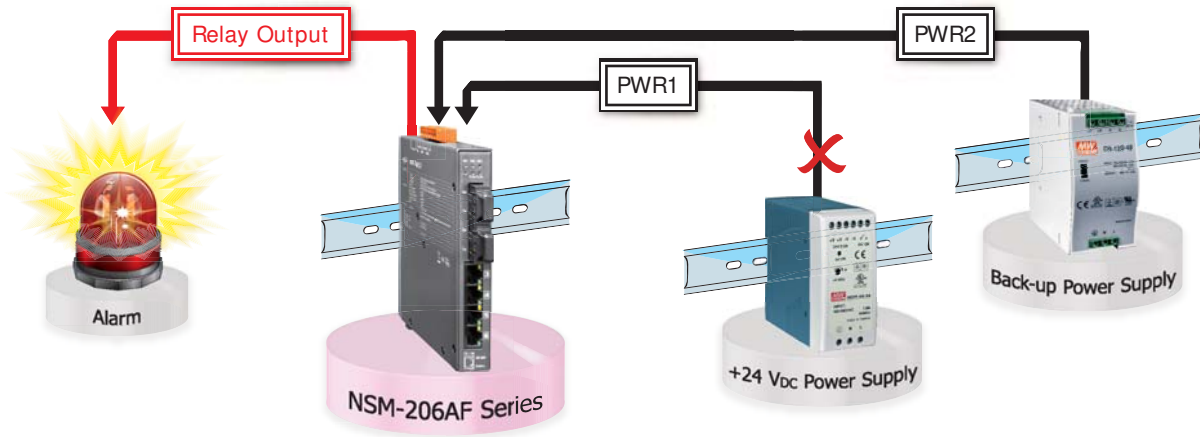
## Pin Functions for Power Input

External power supply is connected using the removable terminal block:
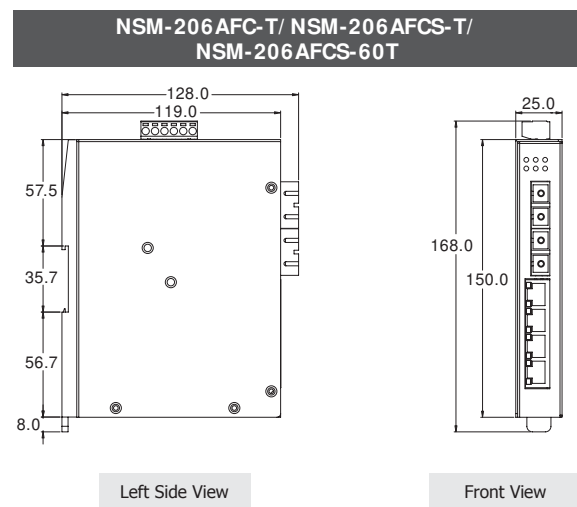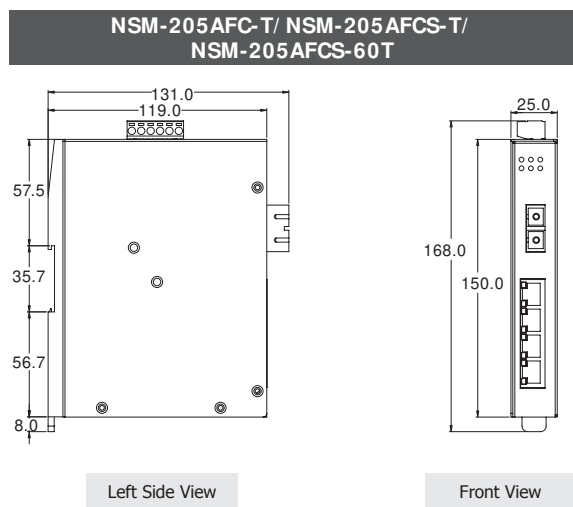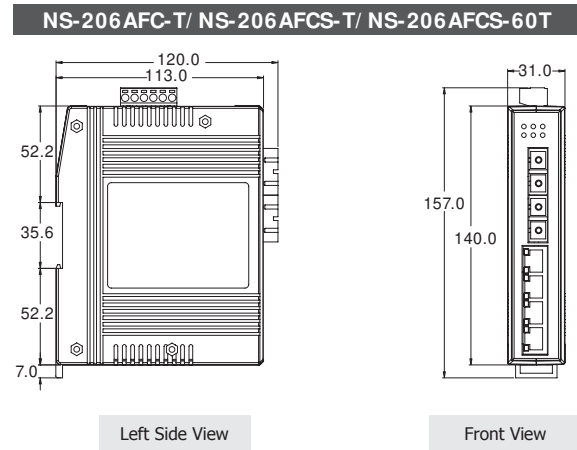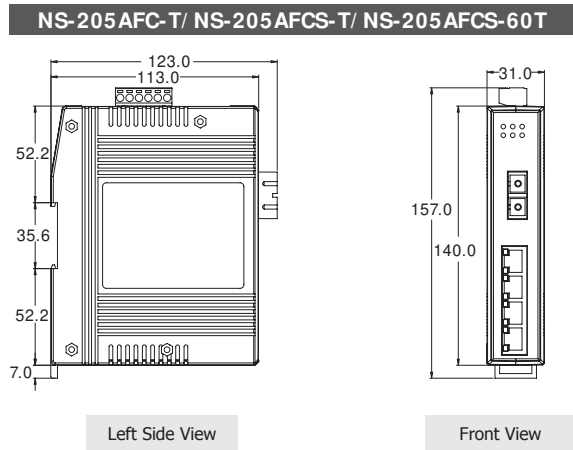PWR: Power input and should be connected to the power supply (+)
GND: Ground and should be connected to the power supply (-)
F.G. : F.G. stands for Frame Ground (protective ground). It is optional. If you use this pin, it can reduce EMI radiation; improve EMI performance and ESD protection.

## Applications



Fiber Daisy Chain Configuration

NS-200AFT-T

NS-206AFT-T

NS-205AFT-T

Fiber cable 2 km

Fiber cable 2 km

## Dimensions (Units: mm)

### NS-205AFC-T/ NS-205AFCS-T/ NS-205AFCS-60T



Left Side View

Front View

### NS-206AFC-T/ NS-206AFCS-T/ NS-206AFCS-60T



Left Side View

Front View

### NSM-205AFC-T/ NSM-205AFCS-T/ NSM-205AFCS-60T



Left Side View

Front View

### NSM-206AFC-T/ NSM-206AFCS-T/ NSM-206AFCS-60T



Left Side View

Front View

## 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) |

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Unmanaged Ethernet Switches