

NS-205FT/NS-205FC/NS-205FCS

4-Port Industrial 10/100 Base-T(X) with 100 Base-FX Switch



Introduction:

The NS-205Fx is an unmanaged 4-Port Industrial Ethernet (10/100Base-TX) with Fiber (100Base-FX) Switch that secures data transmission by using fiber optic transmission to provide immunity from EMI/RFI interference. It is used Ethernet for transmitting a signal up to 2 Km (6,600 ft), and is the perfect solution for applications where transmission must be protected from electrical exposure, surges, lightning or chemical corrosion.

The NS-205Fx operates at either half or full duplex mode. In full duplex mode, range is 2km with 62.5/ 125 μ m fiber cables; in half duplex mode, range is 412m with 62.5/ 125 μ m fiber cables.

Single mode fiber cables: 8.3/125, 8.7/125, 9/125 or 10/125 μ m; 15 km for full duplex. (NS-205FCS Only)

The Ethernet supports 10/ 100M auto-negotiation feature and auto MDI /MDIX function

Features:

- Automatic MDI / MDI-X crossover for plug-and-play
- Each port supports both 10/100 Mbps speed auto negotiation
- Store-and-forward architecture
- Full duplex IEEE 802.3x and half duplex backpressure flow control
- 3.2Gbps high performance memory bandwidth
- Frame buffer memory: 512 Kbit
- Integrated look-up engine with dedicated 1 K unicast MAC addresses.
- DIN rail mount for industrial usage

Specifications:

- Compatibility: IEEE 802.3, IEEE802.3u, IEEE802.3x
- Interface:
 - NS-205FT: 10/100 Base-T(X) and 100 Base-FX(ST Connector; Multi-mode)
 - NS-205FC: 10/100 Base-T(X) and 100 Base-FX(SC Connector; Multi-mode)
 - NS-205FCS: 10/100 Base-T(X) and 100 Base-FX(SC Connector; Single-mode)
- Ethernet Port: 10/100 Mbps x 4
- Fiber Optic Port: 100 Mbps x 1
- Provides LEDs for network and power monitoring
- ESD Protection:
 - 8 KV Contact Discharge
 - 15KV Air-Gap Discharge
- Fiber Optic Transmission distance:
 - Multi mode fiber: 50/125, 62.5/125 or 100/140 μ m
 - Multi mode fiber, 412 m for half duplex, 2 km for full duplex
 - Single mode fiber cables: 8.3/125, 8.7/125, 9/125 or 10/125 μ m; 15 km for full duplex.
- Ethernet Cables:
 - 10 Base-T (Cat.3, 4,5 UTP cable; 100m Max.)
 - 100 Base-TX (Cat.5 UTP cable; 100m Max.)
- Environment:
 - Operating Temperature: 0 °C ~ +70°C
 - Storage Temperature: -20 ~ +85°C
 - Relative Humidity: 10% to 90% non-condensing
- Dimensions: 64 x 110 x 98 mm (W x H x D)
- Power requirements: +10 to +30V DC (Removable Terminal Block)
- Power consumption: 0.14A@24Vdc (+/- 5%, arrowed)

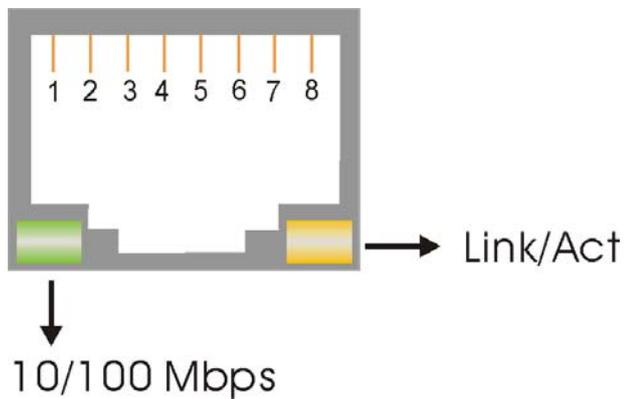
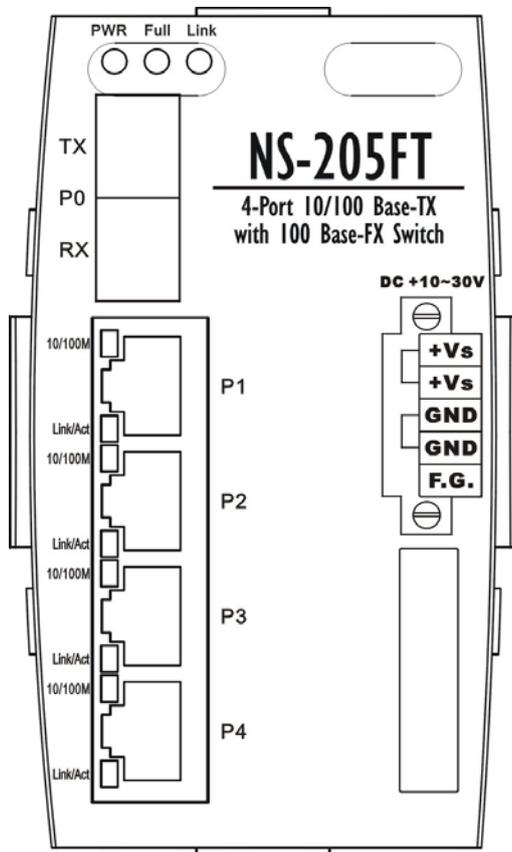
LED functions:

Standard RJ45 female connectors are provided. A standard RJ45 plug cable is necessary to connect your device to the unit since switch that supports auto crossover.

RJ-45 Pin-Out:

LED	Color	Description
Power	Red On	Power is On
	Red Off	Power is Off
Fiber Port(P0)	Yellow On	Full Duplex
	Yellow Off	Half Duplex
	Green On	Link/Act
	Green Off	Not Networking
Ethernet Port (P1 ~ P4)	Yellow On	Link/Act
	Yellow Off	Not Networking
	Green On	Link to 100 Mbps
	Green Off	Link to 10 Mbps

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



Checking Power:

Since the NS-205Fx consumes 3.3W Max, ensure that your power supply is able to meet this demand. The Input voltage range is between +10 and +30VDC. External power supply is connected using the removable terminal block as shown below:

Pin Function For Terminal Block:

External power supply is connected using the removable terminal block:

+Vs : Power input +10 to +30V

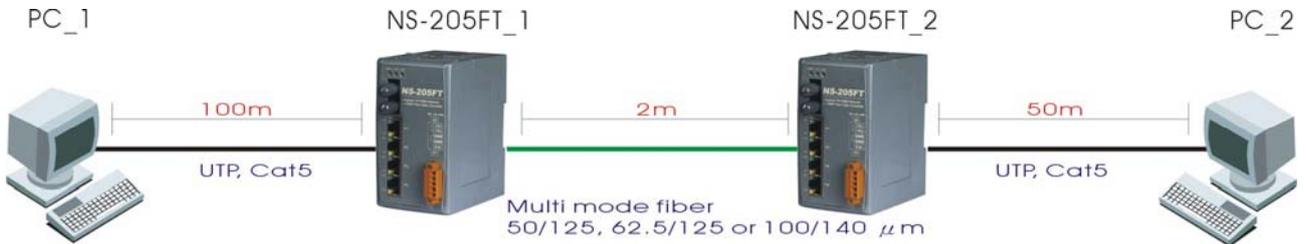
GND : Ground

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

Application Note:

Figure shows common media conversion system network topologies. This figure is a simple end-to-end configuration; it is easy way to verify proper operation of the media converter(s), assuming that the Network Interface Cards (NIC's) or Ethernet ports in each PC/workstation end link partner are properly configured.

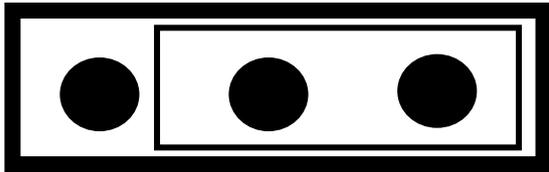
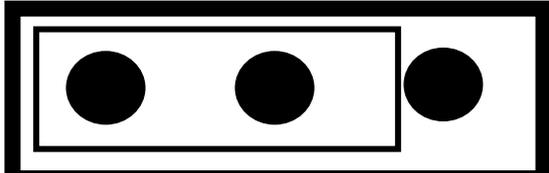
Figure:



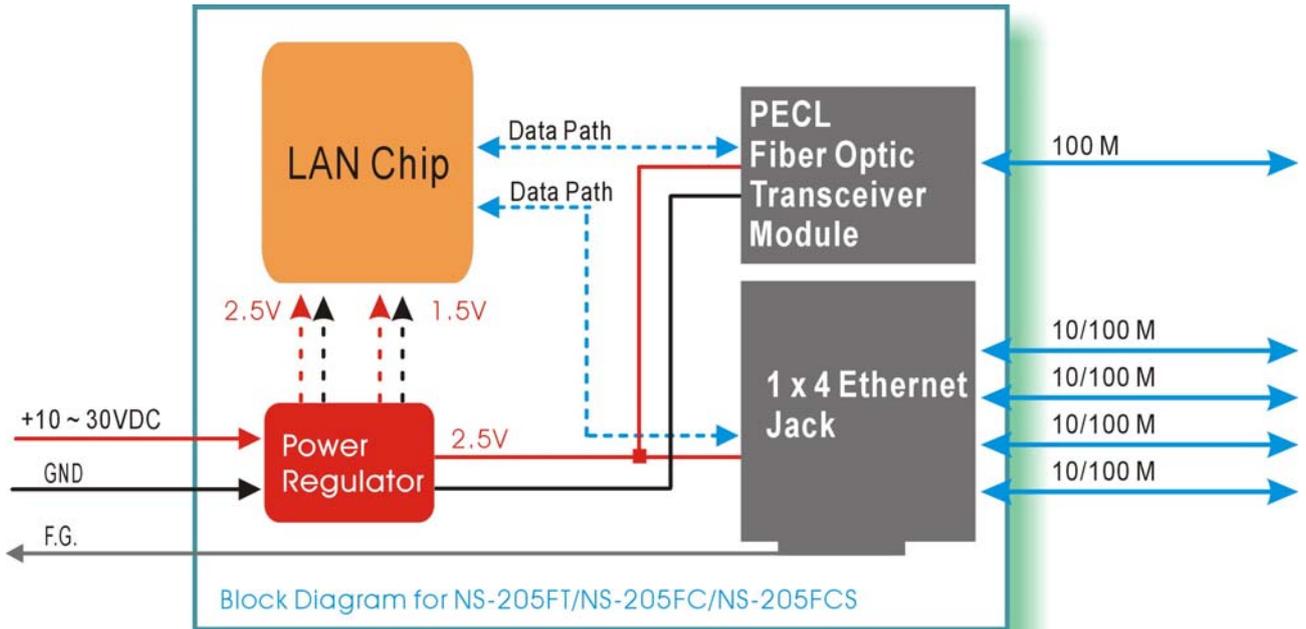
Full / Half-Duplex Selection:

There are two modes of data transmissions, full-duplex and half-duplex transmission. The data can be transmitted in both directions on a single carrier at the same time when you select Full-duplex mode. But the data can only be transmitted in one direction on a single carrier at the same time when you select Half-duplex mode. You may select Full or half-duplex mode according to your equipment requirement.

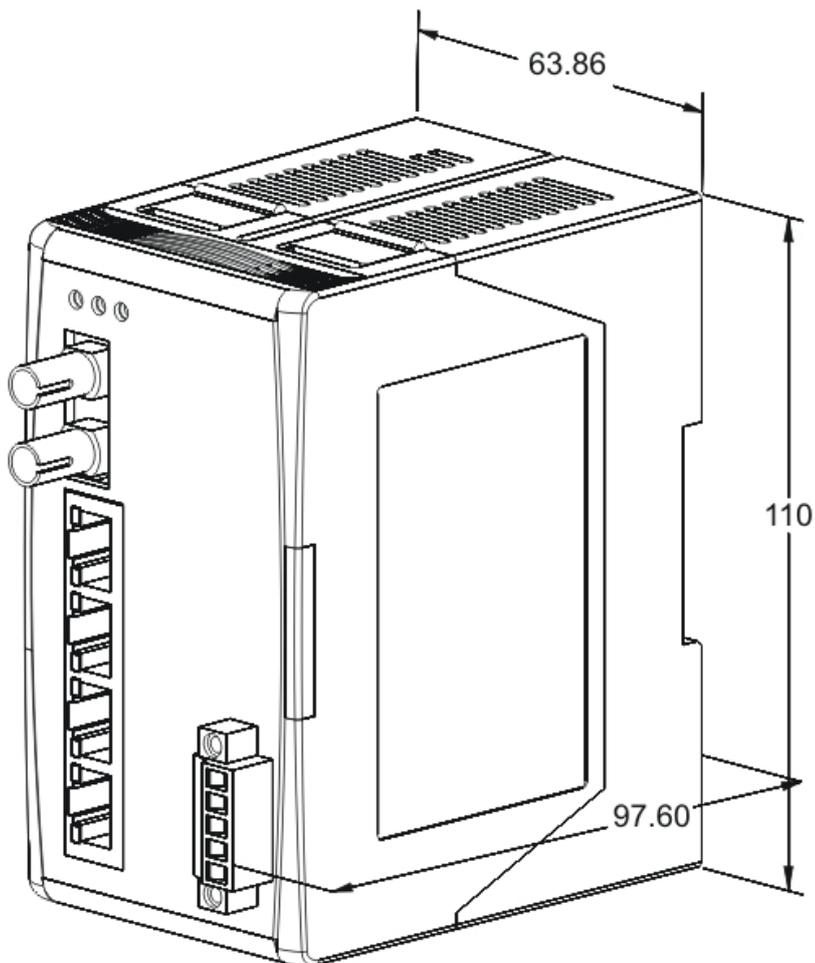
You can configure full or half-duplex NS-205Fx via Jumper. (Default: full-duplex).

JP1 Jumper	Description
 <p style="text-align: center;">3 2 1</p>	<p>Full-duplex (Default)</p> <p>Transmission Distance: 2Km</p>
 <p style="text-align: center;">3 2 1</p>	<p>Half-duplex</p> <p>Transmission Distance: 412m</p>

Block Diagram:



Dimensions:



Unit : mm