NS-200FT/FC/FCS Series

Industrial 10/100 Base-T(X) to 100 Base-FX Media Converter

Introduction:

The NS-200F series is an Ethernet (10/100Base-TX) to Fiber Optic (100Base-FX) converter. The Ethernet supports 10/100M auto-negotiation feature and auto MDI/MDI-X function.

The NS-200F series operates at either half or full duplex mode.
It contains "soft start" function with overload protection, high-low voltage protection.

The width of the NS-200F series is just 33 mm, so it can be used where space is important.

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
- Supports +10 ~ +30 VDC voltage
- Supports operating temperatures from 0 ℃ ~ +70 ℃
- DIN-Rail mount for industrial usage

Specifications:

Technology	
Standards	IEEE802.3, 802.3u, 802.3x
Processing Type	Store & forward wire speed switching
MAC Addresses	1024
Memory Bandwidth	1.4 Gbps
Interface	
RJ-45 Port	10/100BaseT(X) auto negotiation speed, F/H duplex mode, and auto MDI/MDI-X connection
Fiber Port	100 Base-FX
LED Indicators	10/100M, Link/Act, Full duplex/Half duplex(Fiber Port)
Ethernet Isolation	1500 Vrms 1 minute
Frame Ground for EMS Protection	Yes
Multi Mode	Multi mode fiber cables: 50/125, 62.5/125 or 100/140 µm
	Distance: 2 km, (62.5/125 µm recommended) for full duplex
	Wavelength: 1300 or 1310nm
	Min. TX Output: -20 dBm
	Max. TX Output: -14 dBm
	RX Sensitivity: -34 to -31 dBm
Single Mode	Single-mode fiber cables: 8.3/125, 8.7/125, 9/125 or 10/125 µm
	Distance: 15 km, (9/125 µm recommended) for full duplex
	Wavelength: 1300 or 1310nm
	Min. TX Output: - 15 dBm
	Max. TX Output: -8 dBm
	RX Sensitivity: -36 to -31 dBm

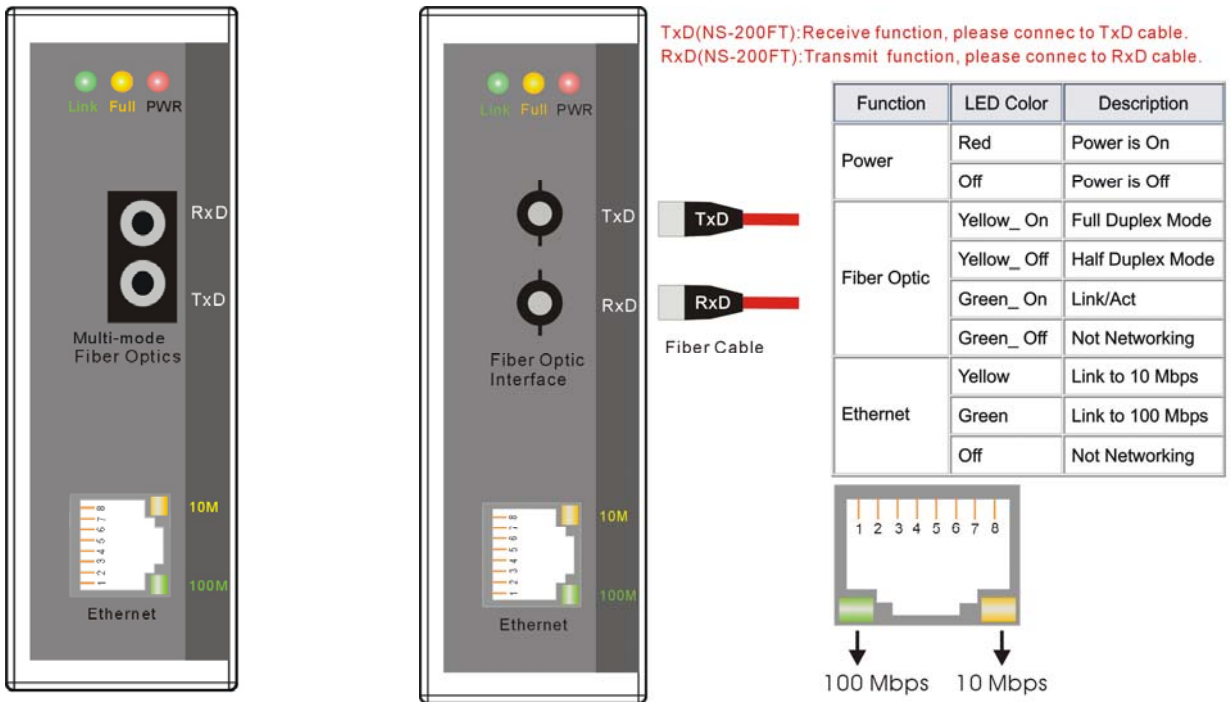
Ethernet Transmission distance	Ethernet: 2-pair UTP/STP Cat.3,4,5, EIA/TIA-568 100-ohm
	Fast Ethernet: 2-pair UTP/STP Cat. 5, EIA/TIA-568 100-ohm
Power	
Input Voltage Range	+10 ~ +30 VDC (Non-isolation)
Power consumption	0.12A@24 VDC, +/- 5% arrowed with 100M Full duplex\
LED Indicator	Yes
Protection	Power reverse polarity protection
Frame Ground for EMS Protection	Yes
Mechanical	
Case	Plastic (Flammability UL 94V-0)
Dimensions (W x H x D)	33mm x 107mm x 85mm
Installation	DIN-Rail
Environmental	
Operating Temperature	0°C ~ +70°C
Storage Temperature	-20 ~ +85°C
Ambient Relative Humidity	10% ~ 90% HR, non-condensing

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. Figure1 shows the LED indicator functions. The module includes an internal.

Figure1:

NS-200FC/NS-200FCS **NS-200FT**

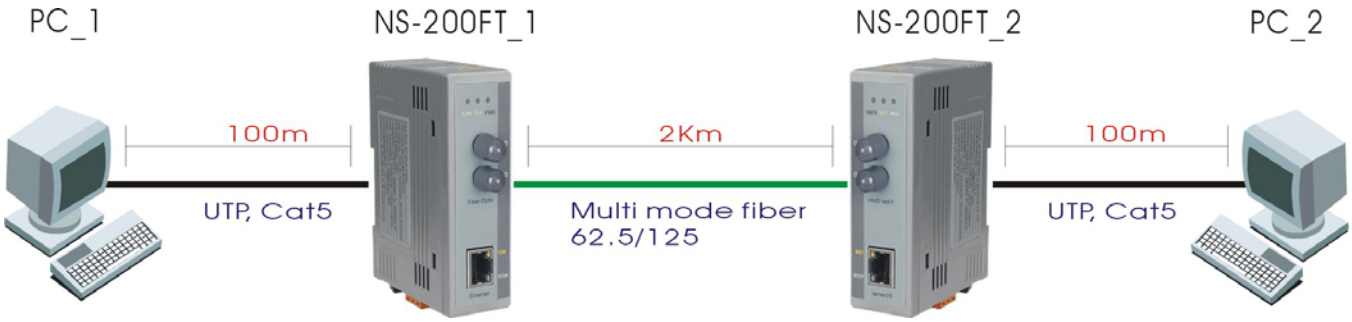


Function	LED Color	Description
Power	Red	Power is On
	Off	Power is Off
Fiber Optic	Yellow_ On	Full Duplex Mode
	Yellow_ Off	Half Duplex Mode
	Green_ On	Link/Act
	Green_ Off	Not Networking
Ethernet	Yellow	Link to 10 Mbps
	Green	Link to 100 Mbps
	Off	Not Networking

Application Note:

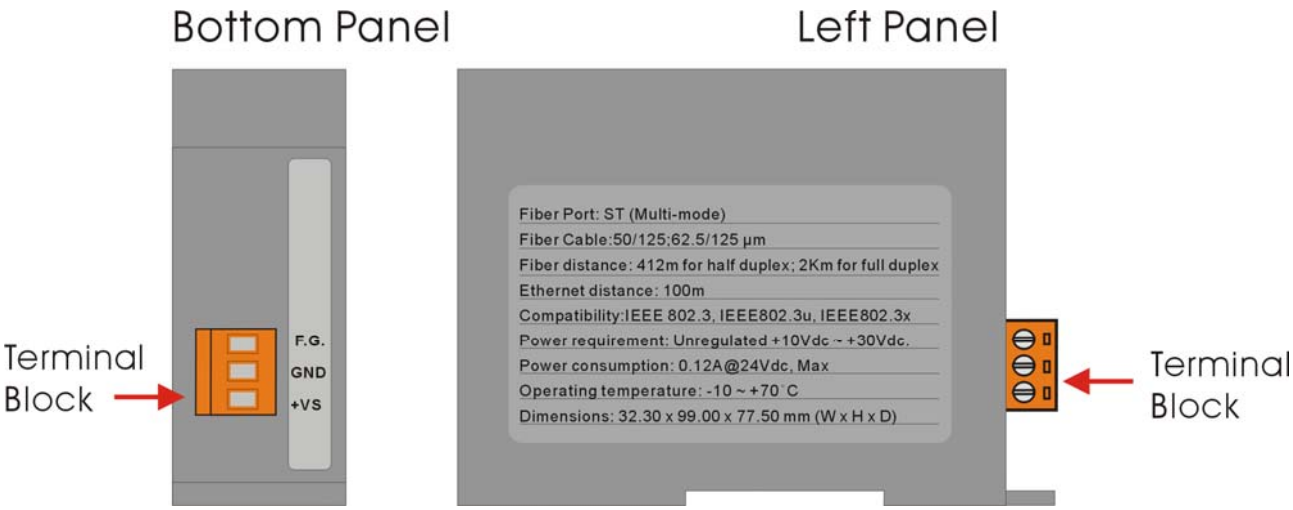
Figure2 shows common media conversion system network topologies. This figure is a simple end-to-end configuration; it is easy way to verify proper operation of the media converter(s), assuming that the Network Interface Cards (NIC's) or Ethernet ports in each PC/workstation end link partner are properly configured.

Figure2:



Checking Power:

Since the NS-200F Series consumes 2.9W Max, ensure that your power supply is able to meets this demand. The Input voltage range is between +10 and +30VDC.
External power supply is connected using the removable terminal block as shown below:



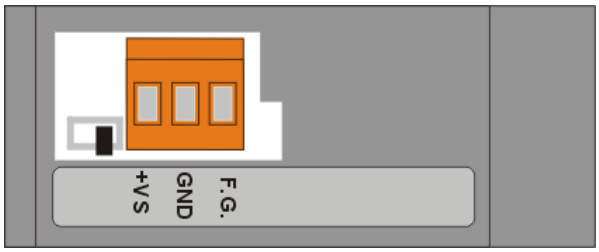
Pin Function for Terminal Block:

External power supply is connected using the removable terminal block:
+Vs : Power input (+10 to +30V) 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.

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-200F Series via DIP –Switch. (Default: full-duplex).

DIP-Switch	Description
	**Full-duplex (Default)** Transmission Distance: 2 km
	 DIP –Switch
	**Half-duplex** Transmission Distance: 412m
	 DIP –Switch

Dimensions: