NS-200FCS

Industrial 10/100 Base-T to 100 Base-FX Fiber Optics Converter

Introduction:

The NS-200FCS is an Ethernet(10/100Base-TX) to Fiber Optics(100Base-FX) converter. The Ethernet supports 10/100M auto-negotiation feature and auto MDI/MDIX function.

The NS-200FCS operates at full duplex mode. In full duplex mode, range is **15km** with 8.3/125, 8.7/125, 9/125 or 10/125 μm fiber cables.

It contains "soft start" function with overload protection, high-low voltage protection.

The width of the NS-200FCS is just 32.30 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
- 1.4Gbps high performance memory bandwidth.
- Supports +10 ~ +30V DC voltage
- Supports operating temperatures from 0 ℃ ~ +70 ℃
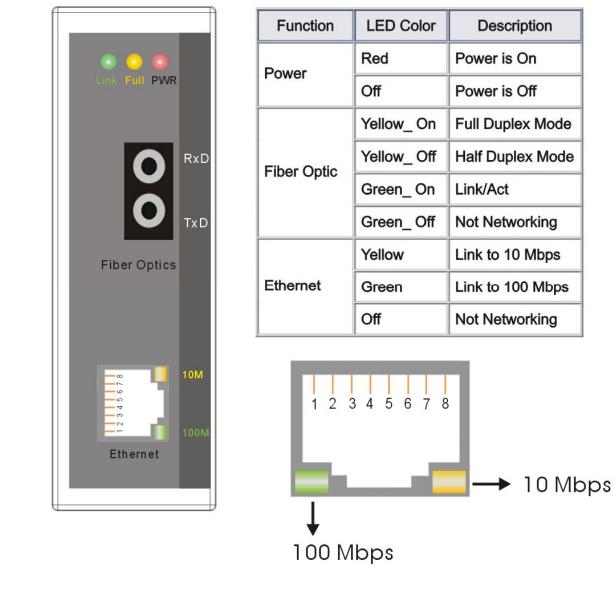- DIN rail mount for industrial usage

- ### *Specifications:*
  Compatibility: IEEE 802.3, IEEE802.3u, IEEE802.3x
- Interface: 10/100 Base-T and 100 Base-FX
- Ethernet Port: 10/100 Mbps x 1
- Fiber Optics Port: 100 Mbps x 1 (Single-mode)
- Provides LEDs for network and power monitoring
- ESD Protection:
  8 KV Contact Discharge
  15KV Air-Gap Discharge
- Fiber Optics Transmission distance:
  Single mode fiber cables:8.3/125, 8.7/125, 9/125 or 10/125 μm ; 15 km for full duplex.
- Ethernet Cables:
  10 Base-T (Cat.3, 4,5 UTP cable; 100m Max.)
  100 Base-T (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: 32.30 x 99.00 x 77.50 mm (W x H x D)
- Power requirements: +10 to 30Vdc (Removable Terminal Block)
- Power consumption: 0.12A@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. Figure1 shows the LED indicator functions. The module includes an internal.
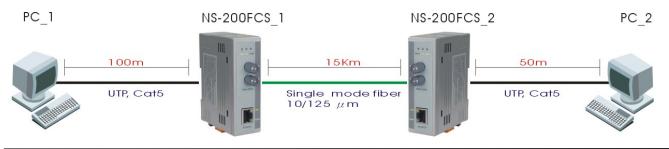
Figure1:

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.
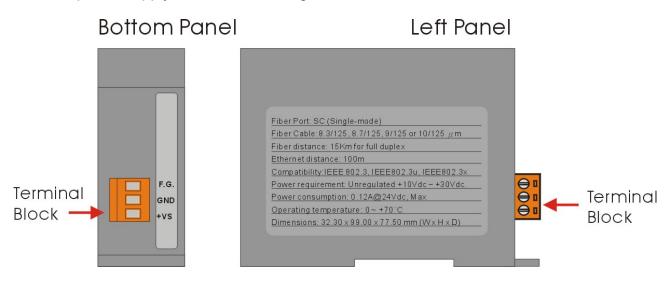
Figure2:

Checking Power:

Since the NS-200FCS 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:

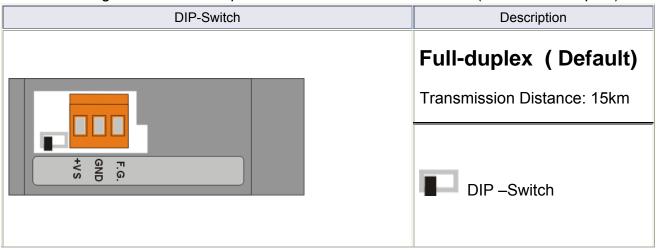## Pin Function For Terminal Block:

External power supply is connected using the removable terminal block:
+Vs **:** Power input +10 to +30V
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.
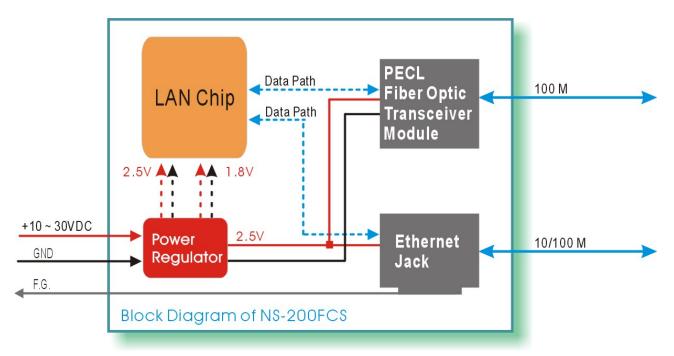
Full / Half-Duplex Selection:

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

DIP-Switch	Description
	Full-duplex (Default) Transmission Distance: 15km
	DIP –Switch

Block Diagram:

Block Diagram of NS-200FCS

Dimensions:

The width of the NS-200FCS is just 32.30 mm, so it can be used where space is important.

Profile Panel

Front Panel