NS-115F

5-Port Industrial 10/100M Ethernet Switch w/Fiber

Introduction:

The NS-115F is an Ethernet (10/100Base-TX) to Fiber Optic (100Base-FX) converter. The Ethernet supports 10/100M auto-negotiation feature and auto MDI/MDIX function.

The NS-115F operates at either half or full duplex mode. In full duplex mode, range is 2km with 62.5/ 125μm fiber cables; in half duplex mode, range is 412m with 62.5/ 125μm fiber cables.

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 ~ +30V DC voltage
- Supports operating temperatures from 0 ℃ ~ +50 ℃
- DIN rail mount for industrial usage

Specifications:

- Compatibility: IEEE 802.3, IEEE802.3u, And IEEE802.3x
- Interface: 10/100 Base-T and 100 Base-FT
- Ethernet Port: 10/100 Mbps x 4)
- Provides LEDs for network and power monitoring
- ESD Protection:
    4KV Contact Discharge
    4KV Air-Gap Discharge
- Fiber Optic Transmission distance:
    Multi mode fiber: 50/125, 62.5/125 or 100/140 μm
    , 412 m for half duplex, 2 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 ℃ ~ +50 ℃
    Storage Temperature: –10 ~ +75 ℃
    Relative Humidity: 10% to 90% non-condensing
- Dimensions: 70 x 125 x 160 mm (W x H x D)
- Power requirements: 10 to +30V DC (Removable Terminal Block)
- Power consumption: 7 Watts

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:
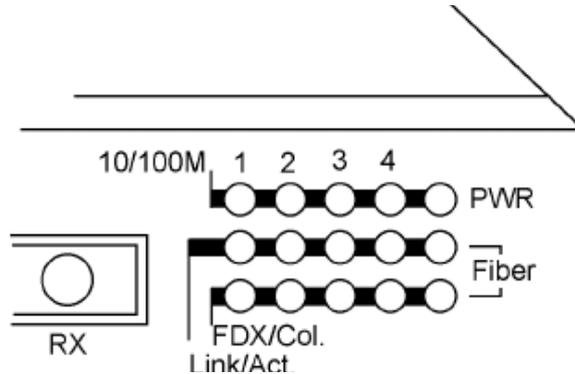
LED Interpretation:

PWR LED : indicates the status of the power supplied to the switch.
10/100M LED : indicates the connection speed between the TP port and the associated connected device.
Link/Act. LED : indicates the link status with a connected device.
**FDX/Col. LED** : indicates the duplex mode and collision occurrences.

The following table lists the LED states and the indications:

LED	STATE	INDICATION
Power	Off	No power is supplied to the device.
Power	On	Power is supplied to the device.
10/100	Off	10Mbps is used.
10/100	On	100Mbps is used.
Link/Act.	Off	No active cable link
Link/Act.	On	An active link is established.
Link/Act.	Blink	Tx/Rx activities
FDX/Col	On	Full duplex is used.
FDX/Col	Off	Half duplex is used.
FDX/Col	Blink	Half duplex and collision occurrences

Application Note:

Figure 2 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:
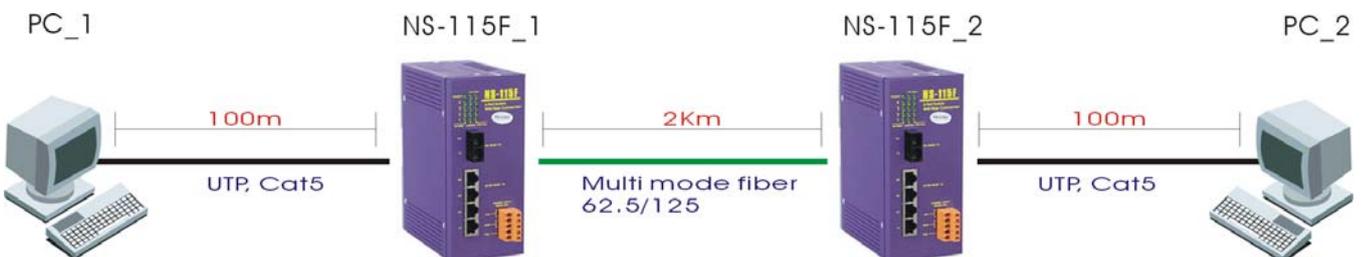
Checking Power:

Since the NS-115F consumes 7 W, ensure that your power supply is able to meet this demand. The Input voltage range is +10~+30VDC.

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-115F via DIP –Switch. (Default: full-duplex).

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

Note: The DIP-Switch on the inside of the NS-115F.