5-Port Fast Ethernet Switch w/h 100FX Connectivity

21.14.3135R

Installation Guide

DOC.071203-NS-105F

General

This 5-port Fast Ethernet switch series provides four 10/100 TP ports and one 100BASE-FX fiber port, each capable of transmitting or receiving information simultaneously at full wire speed to control and allocate the network bandwidth.


Front


Rear

The key features of the switch series are:

- **Optimized Bandwidth**
- **Easy Migration** from Ethernet to Fast Ethernet network
- **Fiber Uplink Support**
- **Easy Installation** with no configuration rquired

Features

- Four 10/100BASE-TX auto-negotiation switched ports and one 100BASE-FX port for flexible connections to desktop PCs, servers and Fast Ethernet devices.
- The 10/100BASE-TX switched ports support:
  - auto-negotiation with auto-negotiation devices
  - full-duplex or half-duplex operation
  - automatic MDI/MDI-X configuration
- For the 100BASE-FX fiber port, the switch series support variety of fiber connectors for different application needs. The fiber connectors include ST, SC, and VF-45 types for multimode and single mode fiber cables.
- Supports duplex mode selector for the 100BASE-FX fiber port.
- Self learning for active MAC addresses and address aging
- Store and forward switching to ensure only good packets are forwarded
- Forwarding and filtering at full wire speed
- Supports IEEE 802.3x flow control for full-duplex operation
- Supports back-pressure flow control for half-duplex operation
- Comprehensive LED indicators provide quick, easy to read port and switch information

1 2

3 4

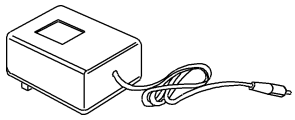
Specifications

10/100 Ports	IEEE 802.3 10BASE-T, IEEE 802.3u 100BASE-TX std. Shielded RJ-45 jacks with Auto MDI-X detection Auto-negotiation capable Speed for 10Mbps or 100Mbps Full-duplex or half-duplex mode support
100FX Port	IEEE 802.3u 100BASE-FX compliant Fixed 100Mbps operation Duplex mode selector - full or half duplex
Flow control	IEEE 802.3x pause packet for full duplex Back-pressure for half duplex operation
Cables	10BASE-T Cat. 3, 4, 5 (100m max.) 100BASE-TX Cat. 5 (100m max.) 100BASE-FX MM or SM fiber cable
LED indicators	Power status Per port : Speed, Link, Activity, Duplex, Collision status
Forwarding rate	14,880 pps for Ethernet (10M) 148,800 pps for Fast Ethernet (100M)
Filtering	Multicast/Broadcast/Unicast address
MAC address	1K entries
Aging time	300 seconds
Environment	Temperature 0°C to 40°C Humidity 10% to 90% non-condensing
Dimensions	144 mm x 104.5 mm x 26 mm (WxDxH) 5.67 x 4.11 x 1.02 inch
DC IN Jack	Rating +7.5V/1A (-D6.3mm/+D2.0mm)
DC IN voltage	Operating +6.0V ~ +12.6VDC
Consumption	DC input 3.9W @+7.5V
Approval	FCC Subpart 15 class A, CE, CISPR 22 A

Unpacking

Check to see that you have everything before you start the installation.

- Installation guide
- The switch unit
- One AC power adapter for the unit

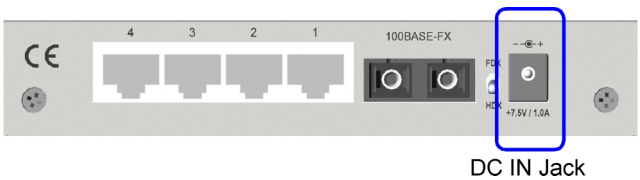


Applying Power

Before you begin the installation, check the AC voltage of your area. The AC power adapter which is used to supply the DC power for the device should have the AC voltage matching the commercial power voltage in your area. Use one of the following rated AC-DC power adapters for your installation.

AC120V/60Hz DC7.5V/1A
AC230V/50Hz DC7.5V/1A
AC100V/50-60Hz DC7.5V/1A
AC240V/50Hz DC7.5V/1A

The DC power jack for the AC power adapter is located on the rear of the switch as shown below:



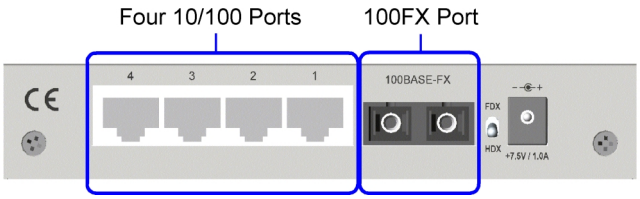
DC IN Jack

Installing the Switch

1. Install the switch with the AC power adapter provided.
2. Connect the power adapter cable to the switch before connecting the adapter to the AC outlet.

Switched Ports

The following figure shows the locations of the switched ports:



Making UTP Connections

10/100 TP Port Configuration

All 10/100 TP ports support configuration as follows:

- Auto-negotiation capable
- Highest capability : 100M Full duplex
- Speed : auto-sensing for 100Mbps or 10Mbps
- Duplex : Full duplex, Half duplex
- Auto MDI-X function

Configuration used when it connects to different devices:

Connected Device	Configuration Used
10BASE-T hub port	10Mbps, half-duplex
100BASE-TX hub port	100Mbps, half-duplex
Auto-negotiation port	Result after auto-negotiation
Non-auto half-duplex port	Auto-speed-sensing , half-duplex
Non-auto full-duplex port	Not supported

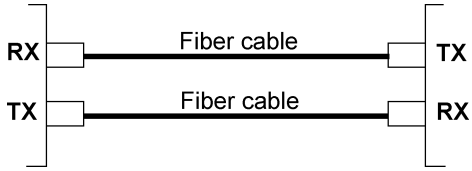
Speed	Cables used	Distance
100M	Cat. 5, 5e, or higher grade	100 meters
10M	Cat. 3, 4, 5, 5e, or higher grade	100 meters

Auto-MDI-X Function

An Auto-MDI-X function will automatically detect if a cross-over is required and make the swap of Tx pair and Rx pair internally. With this function, straight-through cable can be used for any connection. MDI to MDI-X connection rule is not necessary anymore. In the switches, all TP ports are equipped with this function. You can use just straight-through type of cables for all your connections.

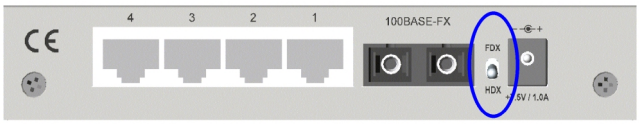
Making Fiber Connection

For different fiber connections, several alternative models can be selected for different fiber connections. Refer to Section 1.2 for the model selection. The following figure illustrates a connection example between two SC fiber ports:



100FX Duplex Selector

This selector is used for 100FX port duplex mode selection as follows:



100FX Duplex Selector

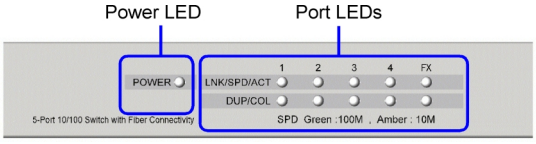
Setting Position	Duplex Mode
FDX	Full duplex
HDX	Half duplex

Maximum **MMF** cable length connecting to different devices:

Connected Device	MMF Distance
Half-duplex fiber port	400 m
Full-duplex fiber port	2 km

LED Indicators

The switch provides comprehensive LED indicators for diagnosing and monitoring the operation of the switch as illustrated below:



LED	State/ Color	Indication
POWER	Off --------	No power is supplied.
POWER	On Green	Power is being supplied.
LNK/SPD/ACT	On Green	100Mbps, link up
LNK/SPD/ACT	On Amber	10Mbps, link up
LNK/SPD/ACT	Blink/ Green	100Mbps, link up, Tx/Rx
LNK/SPD/ACT	Blink/ Amber	10Mbps, link up, Tx/Rx
LNK/SPD/ACT	Off --------	Link down
DUP/COL	On Green	Full duplex
DUP/COL	Off --------	Half duplex, no collision
DUP/COL	Blink/ Green	Half duplex, collisions

Optical Specifications

Model	21.14.3135R
Port /Fiber	SC connector
Wavelength	1310nm
Tx Power	-19 ~ -14dBm
Sensitivity	-31dBm