

# NS-205

## 5-Port Industrial 10/100 Mbps Ethernet Switch



### **Introduction:**

The NS-205 has 5 Ethernet Switching ports that support 10/100Base-T(X), with a 10/100M auto-negotiation feature and auto MDI/MDIX function.

It can connect 5 workstations and automatically switches the transmission speed (10 Mbps or 100 Mbps) for corresponding connections. The flow control mechanism is also negotiated.

LEDs embedded in RJ-45 jacks make for easy monitoring. Port connectors are shielded RJ-45. A power source for +10 to +30VDC is required.

### **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.
- Integrated look-up engine with dedicated 1 K unicast MAC addresses.
- Supports +10 ~ +30V DC voltage
- Supports operating temperatures from -30 ~ +75 °C
- DIN rail mount for industrial usage
- 1.4Gbps high performance memory bandwidth.

### **Specifications:**

- Compatibility: IEEE 802.3, IEEE802.3u, IEEE802.3x
- Interface: 10/100 Base-T(X)
- Port: 10/100 Mbps x 5 (Shielded RJ-45 Jack)
- Provides LEDs for network and power monitoring
- ESD Protection:
  - 8KV Contact Discharge
  - 15KV Air-Gap Discharge
- Cables:
  - 10 Base-T (Cat.3, 4,5 UTP cable; 100m Max.)
  - 100 Base-TX (Cat.5 UTP cable; 100m Max.)
- Environment:
  - Operating temperature: -30 ~ +75 °C
  - Storage Temperature: -40 ~ +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 +30V DC (Removable Terminal Block)
- Power consumption: 0.1A@24VDC, +/- 5% arrowed with 10M Full duplex.  
0.09A@24VDC, +/- 5% arrowed with 100M Full duplex.

**LED functions:**

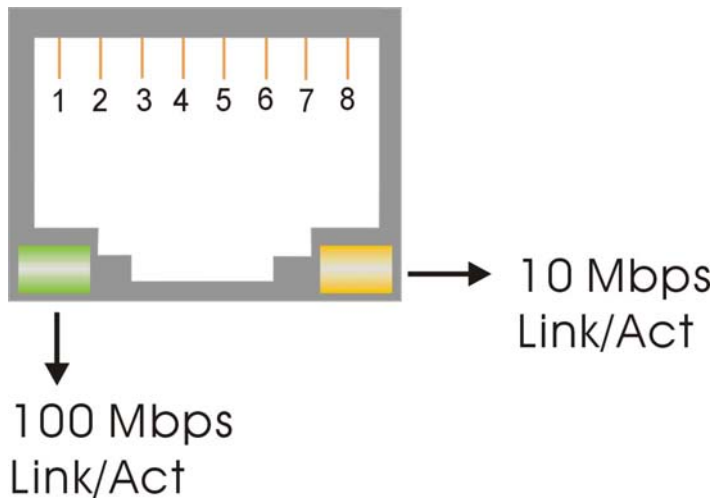
Standard RJ45 female connectors are provided. A standard RJ45 plug cable is all that is necessary to connect your device to the unit since switch that supports auto crossover. Table 1 shows the LED indicator functions. The module includes an internal.

Table 1

LED	Color	Description
Power	Red	Power is On
	Off	Power is Off
10/100M (Port 1)	Yellow	Link to 10 Mbps
	Green	Link to 100 Mbps
	Off	Not Networking
10/100M (Port 2)	Yellow	Link to 10 Mbps
	Green	Link to 100 Mbps
	Off	Not Networking
10/100M (Port 3)	Yellow	Link to 10 Mbps
	Green	Link to 100 Mbps
	Off	Not Networking
10/100M (Port 4)	Yellow	Link to 10 Mbps
	Green	Link to 100 Mbps
	Off	Not Networking
10/100M (Port 5)	Yellow	Link to 10 Mbps
	Green	Link to 100 Mbps
	Off	Not Networking

**Pin-Out:**

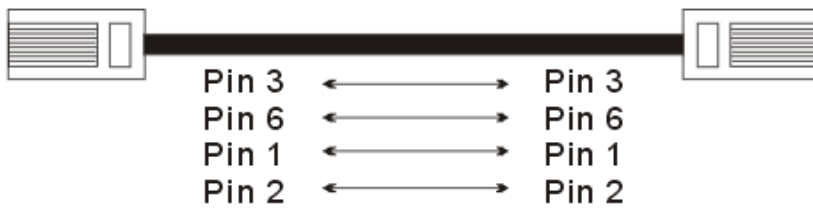
Pin#	Signal Name	Function
1	TD+	Transmit Data
2	TD-	Transmit Data
3	RD+	Receive Data
4	NC	No Connection
5	NC	No Connection
6	RD-	Receive Data
7	NC	No Connection
8	NC	No Connection



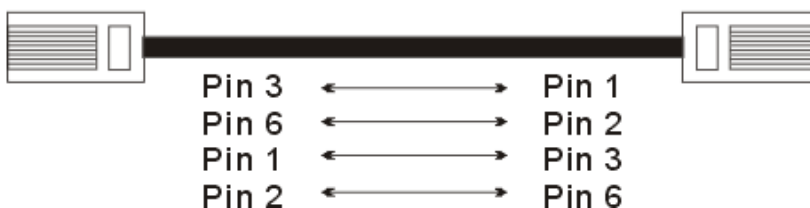
**Ethernet Wiring:**

When making a connection to another device using straight-through UTP cable, make sure the MDI-X to MDI connection rule is followed. The following figure illustrates the pin assignments of a straight-through UTP and a crossover UTP cable:

**RJ-45 to RJ-45 Ethernet Wiring - Straight Type (Host <--> Hub)**



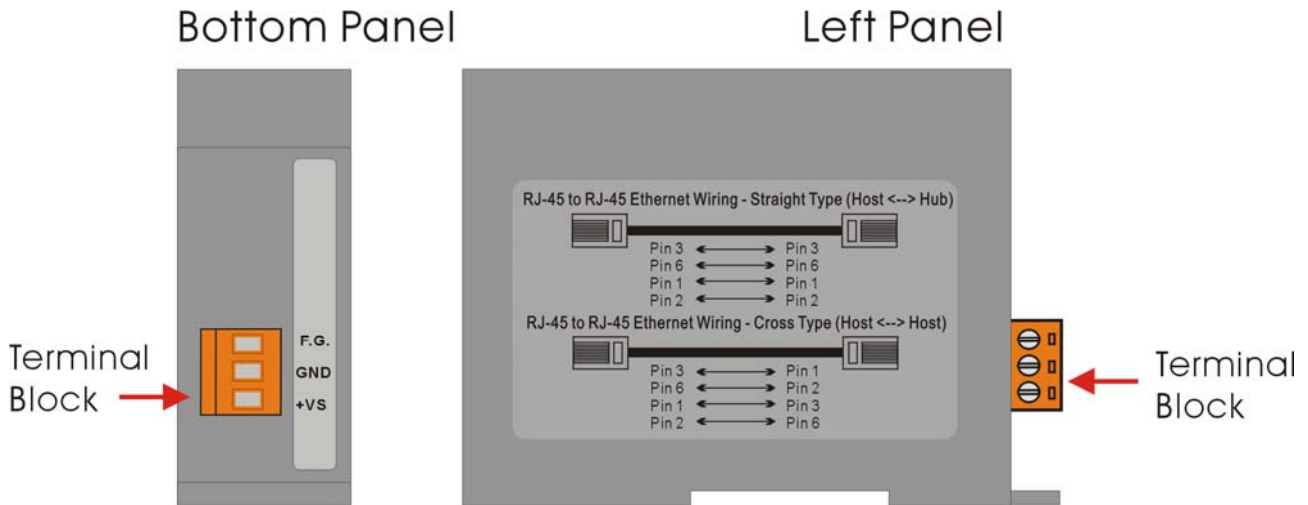
**RJ-45 to RJ-45 Ethernet Wiring - Cross Type (Host <--> Host)**



### Checking Power:

Since the NS-205 consumes 2.4W, ensure that your power supply is able to meet this demand. The Input voltage range is +10~+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.

### Dimensions:

The width of the NS-205 is just 32.30 mm, so it can be used where space is important.

