



## NS-205: 5-Port Industrial 10/100 Mbps Ethernet Switch

### 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 -30 ~ +75 °C
- DIN rail mount for industrial usage



### Specifications:

- Compatibility: IEEE 802.3, IEEE802.3u, IEEE802.3x
- CE and FCC Certified
- Vibration Standard: IEC61373
- Electrical Standard: EN50155
- Interface: 10/100 Base-T
- Port: 10/100 Mbps x 5 (Shielded RJ-45 Jack)
- Provides LEDs for network and power monitoring
- ESD Protection:
- 8KV Contact Discharge
- 15KVAir-Gap Discharge

### Cables:

- 10 Base-T (Cat.3, 4, 5 UTP cable; 100m Max.)
- 100 Base-T (Cat.5 UTP cable; 100m Max.)

### Environment:

- Operating temperature: -30°C ~ +75°C
- Storage Temperature: -30°C ~ +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)
- **Low Power Consumption: 0.052A @24vdc, +/- 5%, allowed**

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



# **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/MDI-X 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 ~ +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 1024 unicast MAC addresses.
- Supports +10 ~ +30V DC voltage
- Supports operating temperatures from -40 ~ +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: 4KV
- Cables:
  - 10 Base-T (Cat.3, 4,5 UTP cable; 100m Max.)
  - 100 Base-TX (Cat.5 UTP cable; 100m Max.)
- Environment:
  - Operating temperature: -40 ~ +75 °C
  - Storage Temperature: -40 ~ +85 °C
  - Relative Humidity: 10% to 90% non-condensing
- Dimensions: 33 mm x 78 mm x 107 mm (W x L x H)
- Power requirements: +10 ~ +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:

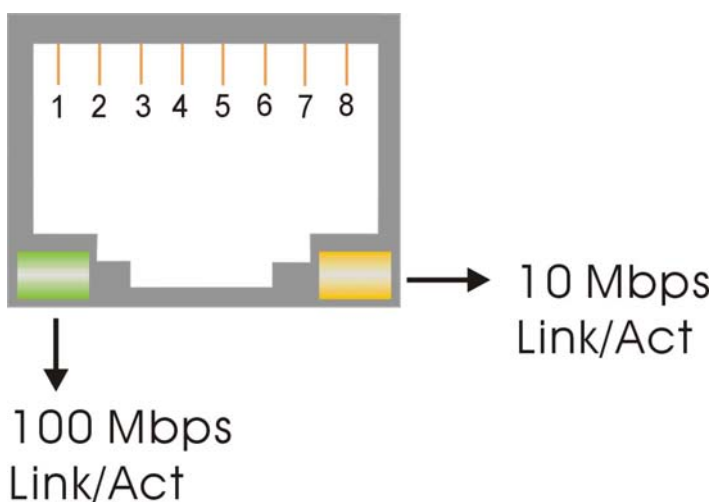
Standard RJ45 female connectors are provided. A standard RJ45 plug cable is all that is necessary to connect your device to the unit since switch that supports auto crossover. Table 1 shows the LED indicator functions. The module includes an internal.

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:

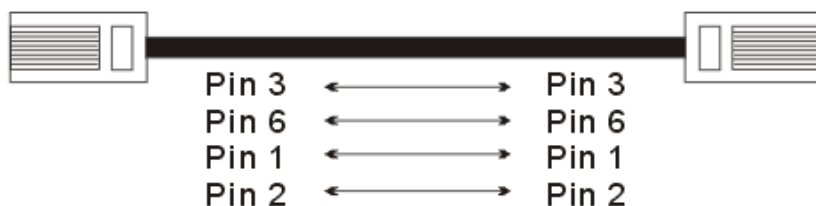
Pin#	Signal Name	Function
1	TD+	Transmit Data
2	TD-	Transmit Data
3	RD+	Receive Data
4	NC	No Connection
5	NC	No Connection
6	RD-	Receive Data
7	NC	No Connection
8	NC	No Connection



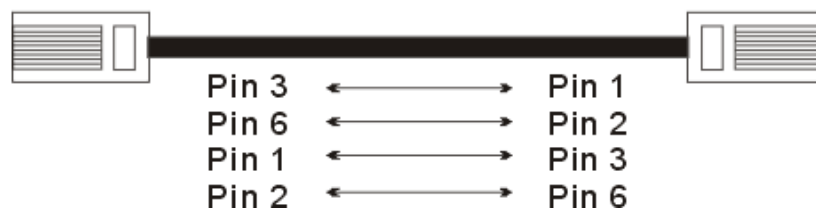
## Ethernet Wiring:

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)



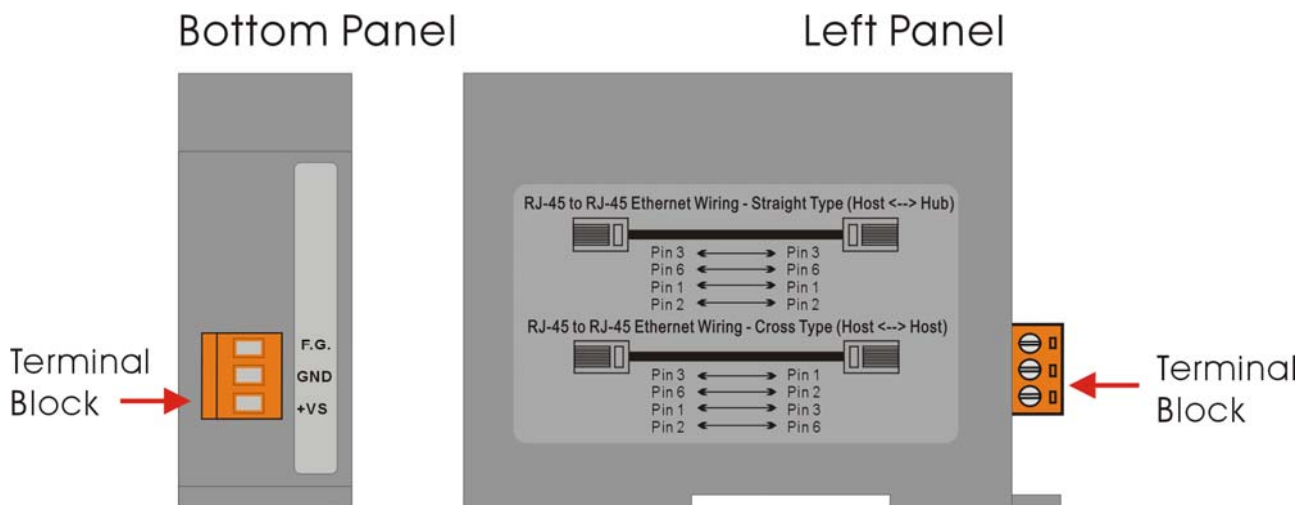
### RJ-45 to RJ-45 Ethernet Wiring - Cross Type (Host <--> Host)



## 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 ~ +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 33 mm, so it can be used where space is important.

