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IES205G
Unmanaged Industrial Ethernet Switch
User Manual

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【Summary】

IES205G switch is a high-performance, cost-effective unmanaged industrial Ethernet switch. The switch supports 5-channel 10/100/1000Base-T(X) Ethernet ports. The product features a fanless and industrial design with low consumption. It offers high reliability and meets various industrial environment requirements, for example, working temperature ranges from -40℃ to 75℃. This device provides cost-efficient solutions.

【Packing List】

Please check the packaging and accessories when you first use the device.

- Industrial Ethernet switch × 1
- User manual × 1
- Qualify certificate × 1
- Warranty card × 1

Please contact us or our distributors if your equipment has been damaged or if any accessories are lost. We will try our best to satisfy you.

【Feature】

- Support 5-Port 10/100/1000Base-T(X) (RJ45)
- Support MAC address automatic learning, automatic aging
- Support 1-channel 12~48VDC power input with 3-pin terminal block, reverse protection
- Working temperature -40~75℃, storage temperature -40~85℃
- DIN-Rail mounting
- Fanless design
- IP40 grade protection, corrugated high-strength metal case
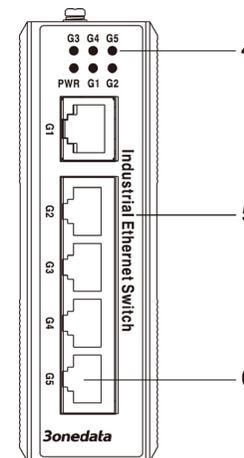
【Panel Layout】

IES205G
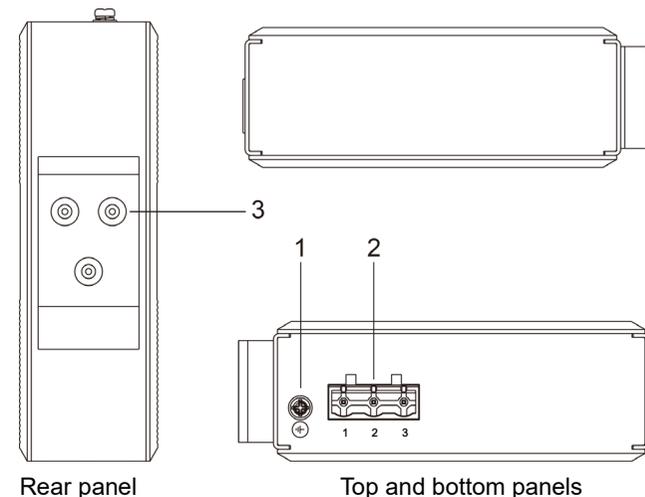
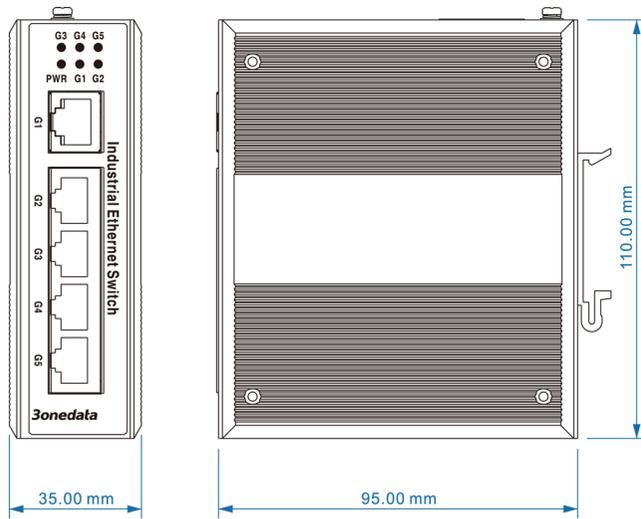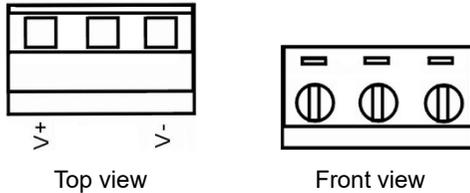
Rear panel

Top and bottom panels

Front panel

1. Ground screw

2. Terminal block for power input

3. DIN-Rail kit

4. Equipment status indicators

5. Product identification

6. 10/100/1000Base-T(X) Ethernet ports

【Appearance and Dimensions】

Unit (mm)

35.00 mm   95.00 mm   110.00 mm

【Power Supply Input】

Top view   Front view

The IES205G switch top panel provides 3-pin power supply input terminal block and supports DC input. Voltage input range is 12~48VDC (terminal block defined as: V+, V−). The power supply has a nonpolar, reverse connection protection function when the device power supply positive and negative reverse connection can still work properly.

Important notice:

1. Power ON operation: insert power cable's terminal block into device's power port, and then connect power supply plug to a power source.
2. Power OFF operation: unpin power plug, and then disconnect the terminal block, please note operation sequence.

【Communication Connector】

10/100/1000Base-T(X) Ethernet port

The pinout of RJ45 port is displayed as follows and is connected to UTP or STP. The connection distance is no more than 100m. 1000Mbps uses 120Ω of UTP CAT5e or CAT6; 100Mbps uses 120Ω of UTP CAT5; 10Mbps uses 120Ω of UTP CAT3, CAT4, and CAT5.
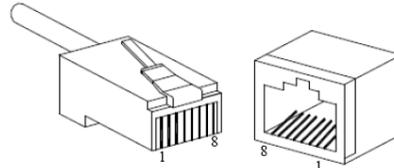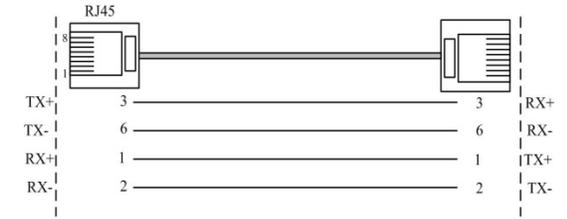

RJ45 port supports automatic MDI/MDI-X operation. That can connect the PC, Server, Converter, and HUB. Pin 1, 2, 3, 4, 5, 6, 7, 8 Corresponding connections in MDI. 1→3, 2→6, 3→1, 4→7, 5→8, 6→2, 7→4, 8→5, are used as cross wiring in the MDI-X port of Converter and HUB. In MDI/MDI-X, 100/1000Base-T(X) PIN is defined as follows:
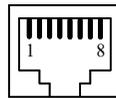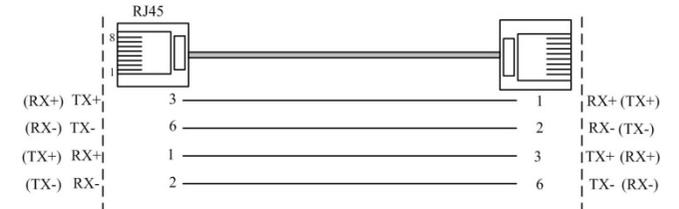

PIN	MDI	MDI-X
1	TX-D1+/TX+	RX-D1+/RX+
2	TX_D1-/TX-	RX_D1-/RX-
3	RX_D2+/RX+	TX_D2+/TX+
4	BI_D3+	BI_D3+
5	BI_D3-	BI_D3-
6	RX_D2-/RX-	TX_D2/TX--
7	BI_D4+	BI_D4+
8	BI_D4-	BI_D4-

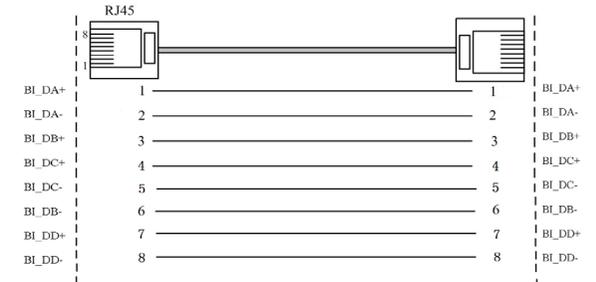Note: 10Base-T/100Base-TX, "TX±" transmit data±, "RX±" receive data±, "—"not use.
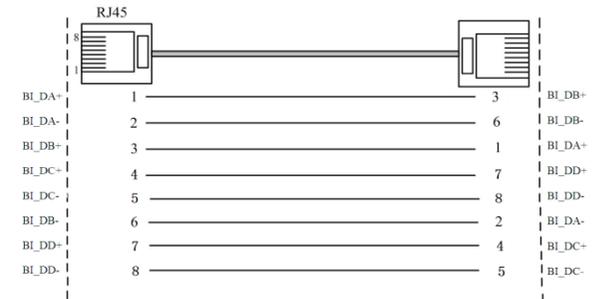
10/100Base-T(X) MDI (Straight-through cable)

	RJ45		
TX+	3	3	RX+
TX-	6	6	RX-
RX+	1	1	TX+
RX-	2	2	TX-

10/100Base-T(X) MDI-X (Cross-over cable)

	RJ45		
(RX+) TX+	3	1	RX+ (TX+)
(RX-) TX-	6	2	RX- (TX-)
(TX+) RX+	1	3	TX+ (RX+)
(TX-) RX-	2	6	TX- (RX-)

Gigabit MDI (Straight-through cable)

	RJ45		
BI_DA+	1	1	BI_DA+
BI_DA-	2	2	BI_DA-
BI_DB+	3	3	BI_DB+
BI_DC+	4	4	BI_DC+
BI_DC-	5	5	BI_DC-
BI_DB-	6	6	BI_DB-
BI_DD+	7	7	BI_DD+
BI_DD-	8	8	BI_DD-

Gigabit MDI-X (Cross-over cable)

	RJ45		
BI_DA+	1	3	BI_DB+
BI_DA-	2	6	BI_DB-
BI_DB+	3	1	BI_DA+
BI_DC+	4	7	BI_DD+
BI_DC-	5	8	BI_DD-
BI_DB-	6	2	BI_DA-
BI_DD+	7	4	BI_DC+
BI_DD-	8	5	BI_DC-

MDI/MDI-X auto connection makes the IES205G switch easy to use for customers without considering the type of network cables.

【LED Indicator】

The led indicator light on the front panel of product, the function of each LED is described in the table as below.

LED system status		
LED	Status	Description
PWR	ON	Power is connected and operates properly.
	OFF	Power is not connected or operates abnormally.
Link/ACT (G1~G5)	ON	Port made effective connection
	Blinking	Port is inactive status
	OFF	Port did not make effective connection

【Installation】

Before installation, ensure that the work environment meets the installation requirements, including the power needs and abundant space. Whether it is close to the connection equipment and other equipment are prepared or not.

1. Avoid in the sunshine, keep away from the heat fountainhead or the area wherein intense EMI.
2. Check the cables and plugs that installation requirements.
3. Check whether the cables be seemly or not (less than 100m) according to the reasonable scheme.
4. Power: 12~48VDC
5. Environment: Working temperature: -40～75℃

   Storage Temperature: -40～85℃

   Relative humidity 5%～95%

DIN Rail Installation

In order to use in industrial environments expediently, the product adopts 35mm DIN-Rail installation, the installation steps are shown as follows:

1. Examine the DIN-Rail attachment
2. Examine DIN Rail whether be firm and the position is suitability or not.

3. Insert the top of the DIN-Rail into the slot just below the stiff metal spring.
4. The DIN-Rail attachment unit will snap into place as shown below.
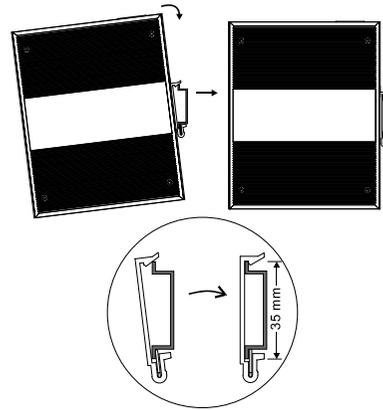
Wiring Requirements

Cable laying needs to meet the following requirements,

1. It is needed to check whether the type, quantity, and specification of cable match the requirement before cable laying;
2. It is needed to check the cable is damaged or not, factory records and quality assurance booklet before cable laying;
3. The required cable specification, quantity, direction and laying position need to match construction requirements, and cable length depends on actual position;
4. All the cable cannot have break-down and terminal in the middle;
5. Cables should be straight in the hallways and turn;
6. Cable should be straight in the groove, and cannot beyond the groove in case of holding back the inlet and outlet holes. Cables should be banned and fixed when they are out of the groove;
7. User cable should be separated from the power lines. Cables, power lines, and grounding lines cannot be overlapped and mixed when they are in the same groove road. When cable is too long, it cannot hold down another cable, but structure in the middle of alignment

rack;

8. Pigtail cannot be tied and served as less as possible. Swerving radius cannot be too small (small swerving causes terrible loss of link). It's banding should be moderate, not too tight, and should be separated from other cables;
9. It should have corresponding simple signal at both sides of the cable for maintaining.

【Specification】

Technology

Standard: IEEE802.3, IEEE802.3u, IEEE802.3x, IEEE802.3ab

Flow control: IEEE802.3x flow control, back press flow control

Exchange Attribute

100M forward speed: 148810pps

1000M forward speed: 1488100pps

100M maximum filter speed: 148810pps

1000M maximum filter speed: 1488100pps

Transmit mode: store and forward

System exchange bandwidth: 14G

MAC address table: 8K

Memory: 1Mbit

Interface

Electric port: 10/100/1000Base-T(X) auto negotiation speed, Full/Half duplex mode, auto MDI/MDI-X connection, and RJ45 connector.

Transfer Distance

Twisted cable: 100M (standard CAT5/CAT5e cable)

LED Indicator

Interface indicators: Link/ACT (1~5)

Power Indicator: PWR

Power Supply

Input voltage: 12～48VDC

Type of input: 3-pin 7.62mm pitch terminal block

Support built-in overcurrent protection

Support power input without polarity

Support reverse protection

Consumption

Unload consumption: 0.864W@24VDC

Full load consumption: 4.632W@24VDC

Working Environment

Working temperature: -40～75℃

Storage temperature: -40～85℃

Relative Humidity: 5%~95% (non-condensing)

Mechanical Structure

Shell: IP40 protect grade, metal shell

Installation: DIN-Rail mounting

Weight: 387g

Size (L×W×H): 110mm×95mm×35mm

Certification

Safety: Through CE, FCC, RoHS, UL508 (Pending)

EMI: FCC Part 15, CISPR (EN55022) class A

EMS: IEC 61000-4-2 (ESD), Level 3

      IEC 61000-4-4 (EFT), Level 3

      IEC 61000-4-5 (Surge), Level 3

Shock: IEC 60068-2-27

Free fall: IEC 60068-2-32

Vibration: IEC 60068-2-6

Warranty

5 years

Please check 3onedata's website for the most up-to-date certification status.