IT-ES3012G-IU Series

Full Gigabit Industrial Ethernet Switch

User Manual

【Summarize】

The IT-ES3012G-IU series switches are high-performance, cost-effective, industrial-grade unmanaged Ethernet switches designed for the power industry. These switches support 8 10/100/1000Base-T(X) Ethernet ports and 4 1000Base-SFP slots (optional). All RJ45 Ethernet ports of switches support automatic flow control, full/half duplex mode and MDI / MDI-X adaptation.

Products with fanless, low power design, work performance more stable. Products meet the FCC, CE standards, -40 ~ 75 ℃ operating temperature range to adapt to the harsh working environment, all components are selected industrial grade, to achieve a high reliability, for the power industry users Ethernet device connection Provide a reliable, economical solution.

【Packing list】

The industrial Ethernet switch is shipped with the following items. If any of these items are missing or damaged, please contact your customer service representative for assistance.

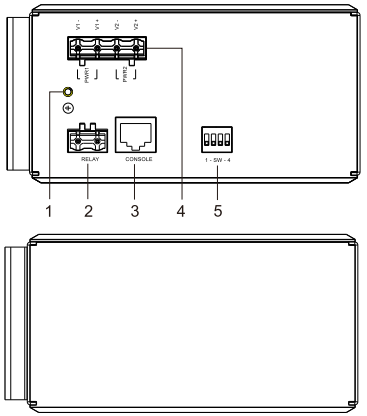
- Industrial Ethernet switch x 1
- User manual x 1
- DIN-Rail mounting kit x 1
- Warranty card x 1
- Certificate of quality x 1

【Feature】

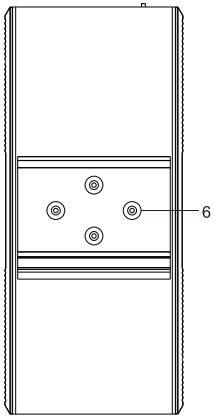
- Supports 8 10/100/1000Base-T(X) RJ45 Ethernet ports and 4 1000Base-SFP fiber ports (optional)
- Supports MAC address auto-learning, auto-aging
- Supports 8K MAC address
- Supports 24Gbps backboard bandwidth
- Supports redundancy DC power supply(12～48VDC)
- Supports 1 channel relay alarm output
- Industrial grade 4 design, -40-75℃working temperature
- IP40 protection grade, DIN-Rail mounting

【Panel layout】

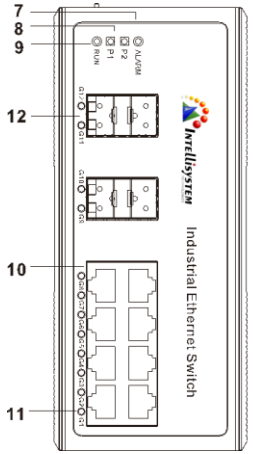
Vertical view and bottom view



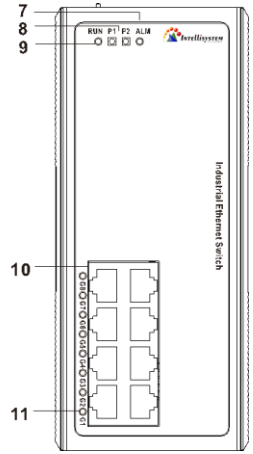
Rear view



Front view



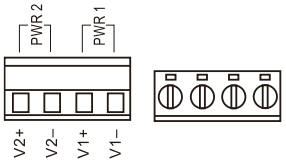
IT-ES3012G-IU-4GS



IT-ES3012G-IU-8GT

1. Ground screw
2. Terminal block for relay output
3. Console port
4. Terminal block for power input
5. DIP switches
6. DIN-Rail mounting kit
7. Relay alarm indicator
8. Power indicator
9. System running indicator
10. Gigabit RJ45 port
11. Gigabit Ethernet port Link/ACT indicator
12. Gigabit SFP port

【Power supply input】

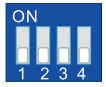


The switch top panel provides a 4-pin power supply input terminal block, support DC input. DC power supply input supported redundancy function, provided PWR1 and PWR2 power input, can use for single, and can connect 2 separately power supply system, use 1 pair terminal block connect the device at the same time. If one of the power systems broke, the device can work un-interruptible. Built-in overcorrect protection, Reverse connection protection. Voltage input range is 12～48VDC (terminal block defined as: V1-、V1+、V2-、V2+).

【Dimension】

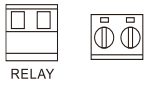
Unit (mm)

【DIP Switch】



The top panel provides a 4-pin DIP switch to do function configure (ON to enable effectively). 1 is power alarm function. 2, 3 and 4 are reserved. Please power off and power on when you change the status of a DIP switch.

【Relay connection】

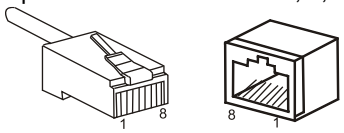


Relay access terminals in the top panel of the device. Between the two terminal relay, as an open circuit state in normal no alarm state, when there is any alarm information to the closed state. The two terminal block connector is used to detect the power failure. The two wires attached to the Fault contacts form an open circuit when the device has lost power supply from one of the DC power input is a failure.

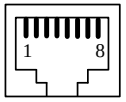
【Communication connector】

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

The pinout of RJ45 port display as below, connect by UTP or STP. The connect distance is no more than 100m. 1000Mbps is used 120Ω of UTP 5e; 100Mbps is used 120Ω of UTP 5; 10Mbps is used 120Ω of UTP 3, 4, 5.



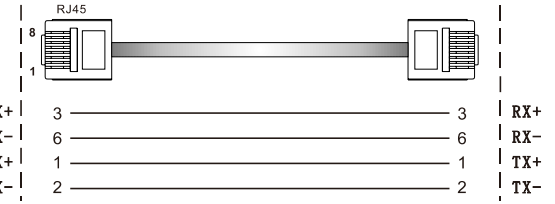
RJ45 port support automatic MDI/MDI-X operation. That can connect the PC, Server, Converter and HUB. Pin 1, 2, 3, 4, 5, 6, 7, 8 Corresponding connections in MDI. 1→3, 2→6, 3→1, 4→7, 5→8, 6→2, 7→4, 8→5, are used as cross wiring in the MDI-X port of Converter and HUB. In MDI/MDI-X, 100/1000Base-TX PIN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



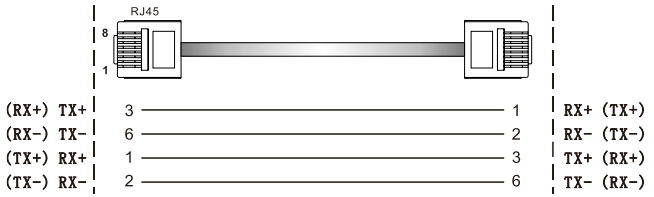
PIN	MDI	MDI-X
1	BI_DA+/TX+	BI_DB+/RX+
2	BI_DA-/TX-	BI_DB-/RX-
3	BI_DB+/RX+	BI_DA+/TX+
4	BI_DC+/—	BI_DD+/—
5	BI_DC-/—	BI_DD-/—
6	BI_DB-/RX-	BI_DA-/TX-
7	BI_DD+/—	BI_DC+/—
8	BI_DD-/—	BI_DC-/—

Note: 10Base-T/100Base-TX, “TX±” transmit data±, “RX±” receive data±, “—”not use.

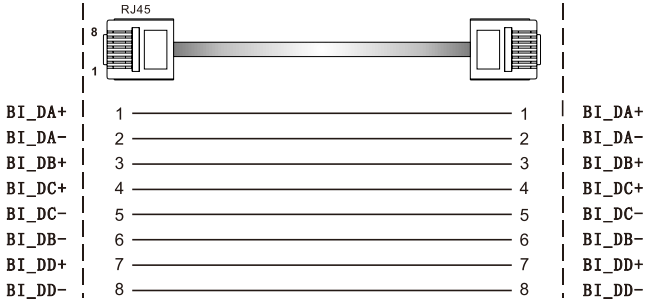
10/100Base-T(X) MDI (straight-through cable)



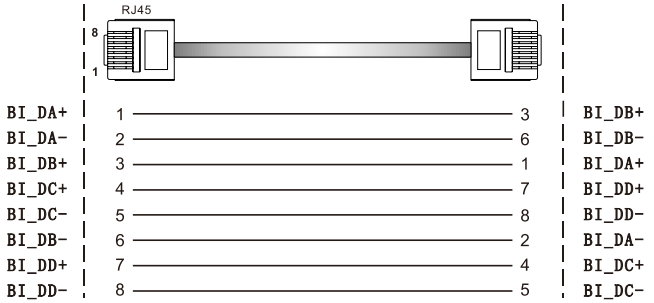
10/100Base-T(X) MDI-X (Cross over cable)



Gigabit MDI (straight-through cable)



Gigabit MDI-X (Cross over cable)

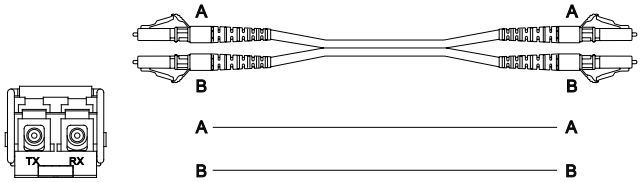


MDI/MDI-X auto connection makes switch easily to use for customers without considering the type of network cable.

1000Base SFP fiber port (mini-GBIC)

1000Base-SFP fiber port adopts Gigabit mini-GBIC transmission, can choose different SFP module according to different transfer distance. Fiber interface must use for the pair, TX port is transmitted side, must connect to RX (receive side). The fiber interface support loss line indicator.

Suppose: If you make your own cable, we suggest labeling the two sides of the same line with the same letter (A-to-A and B-to-B, shown as below, or A1-to-A2 and B1-to-B2).



【LED Indicator】

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

System indication LED		
LED	**State**	**Description**
RUN	ON	System is running well
	OFF	System is not running well
P1	ON	Power is being supplied to power input PWR1
	OFF	Power is **not** being supplied to power input PWR1
P2	ON	Power is being supplied to power input PWR2
	OFF	Power is **not** being supplied to power input PWR2
ALARM	ON	When the alarm is enabled, power or the port's link is inactive.
	OFF	Power and the port's link is active, the alarm is disabled.
Link/ACT (G1~G8/ G12)	ON	Port connection is active
	OFF	Port connection is not active
	Blinking	Data transmitted

【Installation】

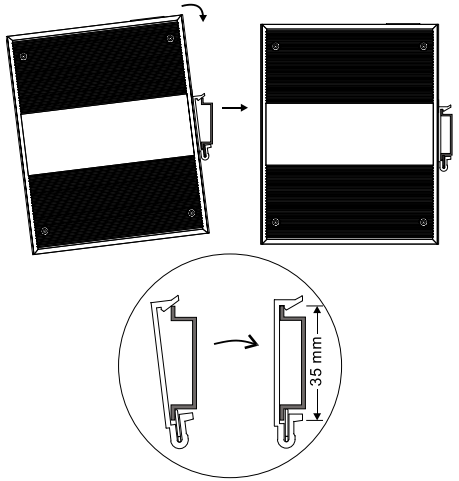
Before installation, confirm that the work environment meets the installation requirements, including the power needs and abundant space. Whether it is close to the connection equipment and other equipment are prepared or not.

1. Avoid in the sunshine, keep away from the heat fountainhead or the area where in intense EMI.
2. Examine the cables and plugs that installation requirement.
3. Examine 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 as below:

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

【Specification】

Technology

Standard: IEEE802.3, IEEE802.3u, IEEE802.3z/ab

Exchange attribute

100M forward speed: 148810pps

1000M forward speed: 1488100pps

Transmit mode: store and forward

System exchange bandwidth: 24G

MAC address table: 8K

Memory: 4Mbit

Interface

Gigabit RJ45 port: 10/100 /1000Base-T(X) auto speed control, Half/full duplex and MDI/MDI-X auto detect

Gigabit SFP port: 1000Base-X, SFP slots

Console port: Reserved

Alarm port: 2-pin 7.62mm spacing terminal block

1 channel relay alarm output

Transfer distance

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

Multi-mode: 1310nm, 2Km

Single-mode: 1310nm, 20/40Km

1550nm, 60/80/100/120Km

LED indicator

Run indicator: RUN

Interface indicator: Link (G1~G8/G12)

Power supply indicator: P1, P2

Alarm indicator: ALARM

Power supply

Input Voltage: 12～48VDC

Type of input: 4-pin 7.62 mm spacing terminal block

DC support reverse connection

DC support redundant power supply

Consumption

- IT-ES3012G-IU-4GS

No-load consumption: 4.85W@24VDC

Full-load consumption: 10.32W@24VDC

- IT-ES3012G-IU-8GT

No-load consumption: 4.35W@24VDC

Full-load consumption: 9.56W@24VDC

Working environment

Working temperature: -40～75℃

Storage temperature: -40～85℃

Relative Humidity: 5%~95 %(no condensation)

Mechanical Structure

Shell: IP40 protect grade, metal shell

Installation: DIN-Rail mounts

Weight: 960g

Size (W×H×D): 70mm×160mm×130mm

Industry Standard

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

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

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

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

Shock: IEC 60068-2-27

Free fall: IEC 60068-2-32

Vibration: IEC 60068-2-6

Certification

CE, FCC, RoHS, UL508 (Pending)

Warranty: 5 years

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