

# ES2010G-2GF

## Full Gigabit Ethernet Switch

### User manual

#### 【Summarize】

ES2010G-2GF is a kind of full Gigabit unmanaged Ethernet switch, it support 8 port 10/100/1000 Base-T(X) RJ45 Ethernet and 2 port 1000 Base-FX optical fiber interface, DC power supply (12-48VDC). It adopted no fan, low power consumption design, IP40, corrugate high strength iron shell, the performance is more steadily. The product accorded with CE, FCC standard and Industrial 4 grades, DIN rail installation and wide operating temperature (0~55 °C), it can satisfied some kinds of industrial environment, it can provide reliable and quickly solution for your Ethernet device.

#### 【Packing list】

The Gigabit 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.

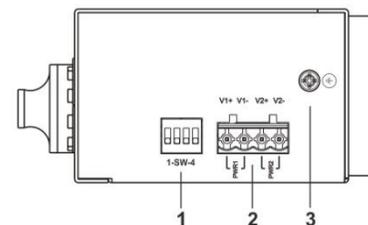
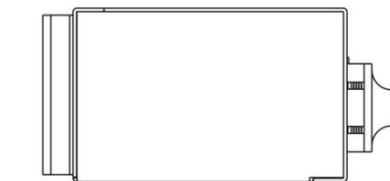
- Gigabit Ethernet Switch × 1
- User manual × 1
- DIN-Rail mounting kit × 1
- Warranty card × 1

#### 【Features】

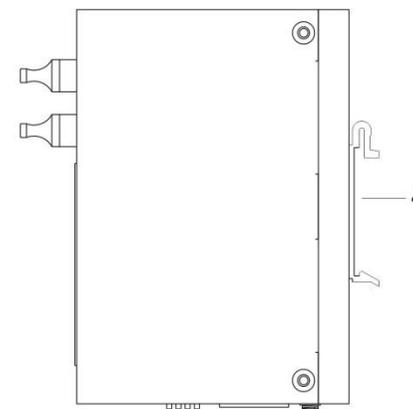
- Support 8 port 10/100/1000Base-TX and 2 port 1000Base-FX (SC/ST/FC optional)
- Support IEEE802.3/802.3u/802.3x/802.3z/802.3ab store and forward
- Ethernet port support 10/100/1000M self-adaption
- Support redundant power input (DC12~48V), support reverse connection protection
- Support 0~55°C working temperature
- IP40 protect grade, high strength iron shell
- DIN Rail installation.

#### 【Panel layout】

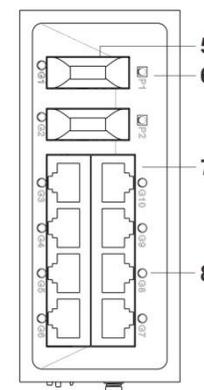
Vertical view and bottom view



Side view



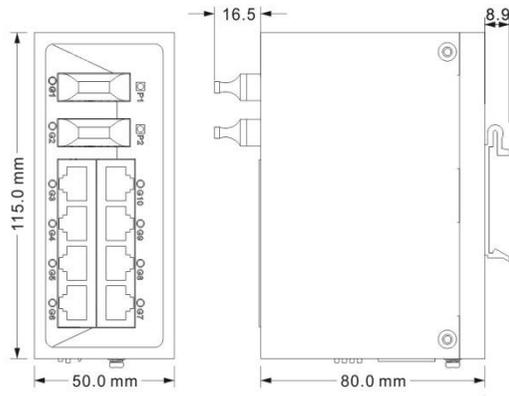
Front view



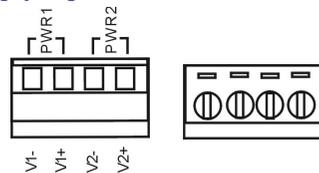
1. DIP Switch
2. Power input terminal block (4 bits)
3. Ground screw
4. DIN-Rail mounting kit
5. 1000Base-FX fiber port
6. Power indicator
7. 10Base-T /100Base-TX/1000Base-TX Ethernet port
8. Gigabit Ethernet port indicator

### 【Dimension】

Unit (mm)



### 【Power supply input】



The Ethernet switch provided 4 bit 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+).

### 【DIP switch】

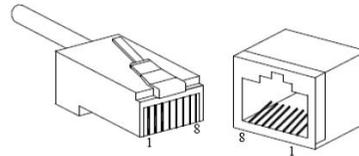


The switch provided 4 bits DIP switch to do function configure (ON is enable), 1 is flow control, 2 is fiber port trunking, 3 is port isolation, 4 is keep for future function.

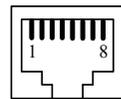
### 【Communication connector】

#### 10/100/1000BaseT(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.



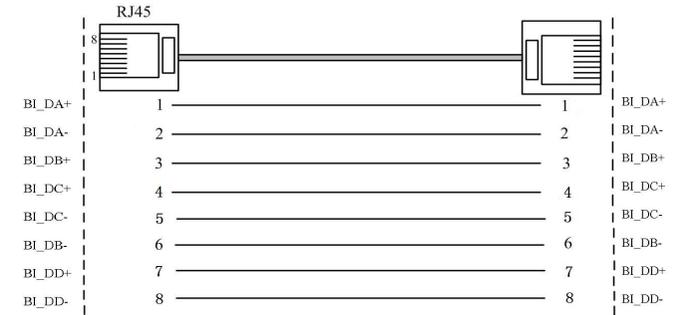
RJ 45 port support automatic MDI/MDI-X operation. That can connect the PC, Server, Converter and HUB. Pin 1, 2, 3, 4, 5, 6, 7, 8 Corresponding connections in MDI. 1→3, 2→6, 3→1, 4→7, 5→8, 6→2, 7→4, 8→5, are used as cross wiring in the MDI-X port of Converter and HUB. In MDI/MDI-X, 100/1000Base-TX PIN defines is as follows:



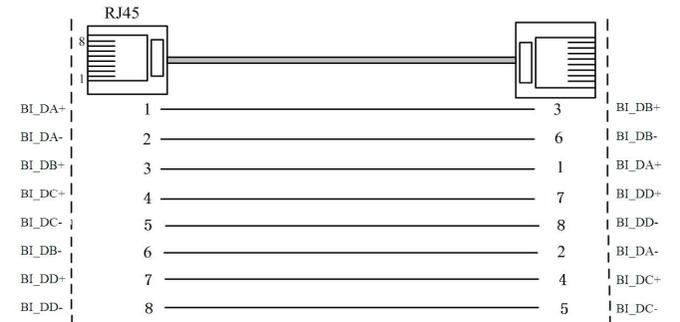
PIN	MDI	MDI-X
1	BI_DA+/TX+	BI_DB+/RX+
2	BI_DA-/TX-	BI_DB-/RX-
3	BI_DB+/RX+	BI_DA+/TX+
4	BI_DC+/-	BI_DD+/-
5	BI_DC-/-	BI_DD-/-
6	BI_DB-/RX-	BI_DA-/TX-
7	BI_DD+/-	BI_DC+/-
8	BI_DD-/-	BI_DC-/-

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

### Gigabit MDI (straight-through cable)



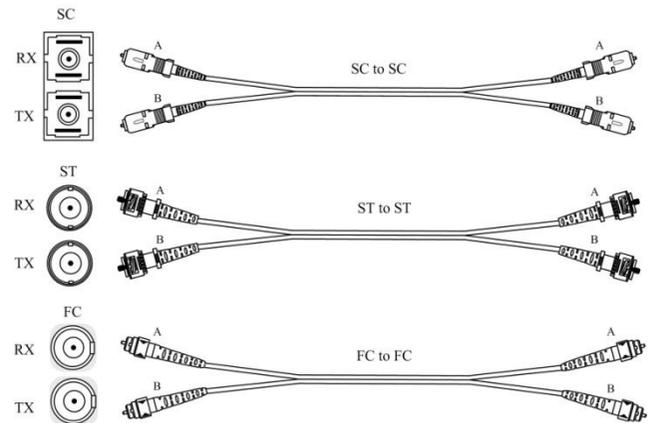
### Gigabit MDI-X (Cross over cable)



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

### 1000Base-X SC/ST/FC port

1000Base-X port support full-duplex SC/ST/FC Multi mode or Single mode.



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 above, 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
P1, P2	ON	Power is being supplied to power input PWR input
	OFF	Power is <b>not</b> being supplied to power input PWR input
LINK/ACT (G1~G10)	ON	Port connection regular.
	Blinking	Port connection active
	OFF	Port had no connection.

### 【Installation】

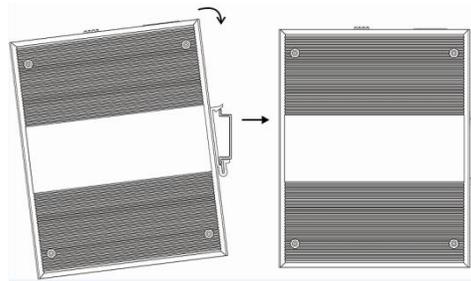
Before installation, confirm that the work environment meet the installation require, including the power needs and abundant space. Whether it is close to the connection equipment and other equipments are prepared or not.

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 requirements.
3. Examine whether the cables be seemly or not (less than 100m) according to reasonable scheme.
4. Power: 12-48VDC power input
5. Environment: working temperature: 0~55℃  
Storage Temperature: -10~65℃  
Relative humidity 5%~95%

### DIN Rail Installation

In order to use in industrial environments expediently, the product adopt 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 need 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 turning;
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 banded 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 other cable, but structure in the middle of alignment rack;
8. Pigtail cannot be tied and swerved as less as possible. Swerving radius cannot be too small (small swerving causes terrible loss of link). Its 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, IEEE802.3z, IEEE802.3ab

Flow control: IEEE802.3x, back pressure control

#### Interface

Electric port: 10Base-T/100Base-TX/1000 Base-TX auto speed control, Half/full duplex and MDI/MDI-X auto detect  
1000M optic fiber port: 1000Base-FX, SC/ST/FC connector

#### Exchange of attribute:

Transmission: Store and forward  
System exchange bandwidth: 20Gbps  
Memory: 1Mbit  
MAC address: 8K

#### LED indicator

Interface indicator: Link (G1~G10)  
DC Power supply indicator: P1, P2

#### Transfer distance

Twisted cable: 100M (standard CAT5/CAT5e cable)  
Multi-mode: 1310nm, 2Kkm  
Single-mode: 1310nm, 20/40Kkm  
1550nm, 60/80/100/120Kkm

#### Power supply

Input voltage: 12~48VDC

Type of input: 4 bit 7.62mm pitch terminal block

No-load power consumption: 3.9W@24VDC

Full-load power consumption: 8.6W@24VDC

Support reverse connection protection

#### **Working environment**

Working temperature: 0~55°C

Storage temperature: -10~65°C

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

#### **Mechanical Structure**

Shell: IP40 protect grade, metal shell

Installation: DIN-Rail mounting

Weight: 450g

Size (W×H×D): 50mm×115mm×80mm

#### **Industry Standard**

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

EMS: EN61000-4-2 (ESD), Level 1

EN61000-4-5 (Surge), Level 1

Shock: IEC 60068-2-27

Free fall: IEC 60068-2-32

Vibration: IEC 60068-2-6

#### **Certification**

CE, FCC, RoHS, UL508 (Pending)

**Warranty:** 3 years