IT-ES716-IM-2GS-P(12~48VDC)

Gigabit Unmanaged Industrial Ethernet Switch

User Manual

【Summarize】

IT-ES716-IM-2GS is an industrial grade, network type, redundant Ethernet switch. The switch provides advanced network management functions, such as: SW-Ring^{TM} redundant ring network, virtual local area network, Trunking (trunking), quality of service (Quality of Service), rate control, port mirroring, fault alarm and firmware upgrade online.

The unique SW-Ring^{TM} redundant ring network technology brings intelligent redundancy for your Ethernet network; industrial design standards, can meet the various requirements of industrial field; all devices are the preferred devices industrial grade, has realized the high reliability. IT-ES716-IU- 2GS switch provides a wide voltage input. SW-Ring^{TM} technology is by rapid ring algorithm design and development of the Intellisystem Technologies. It provides rapid ring fault recovery technology, the healing time of less than 20 ms.

【Packing List】

The first time use this product, please check the packaging is intact or not and the attachment is complete or not at first.
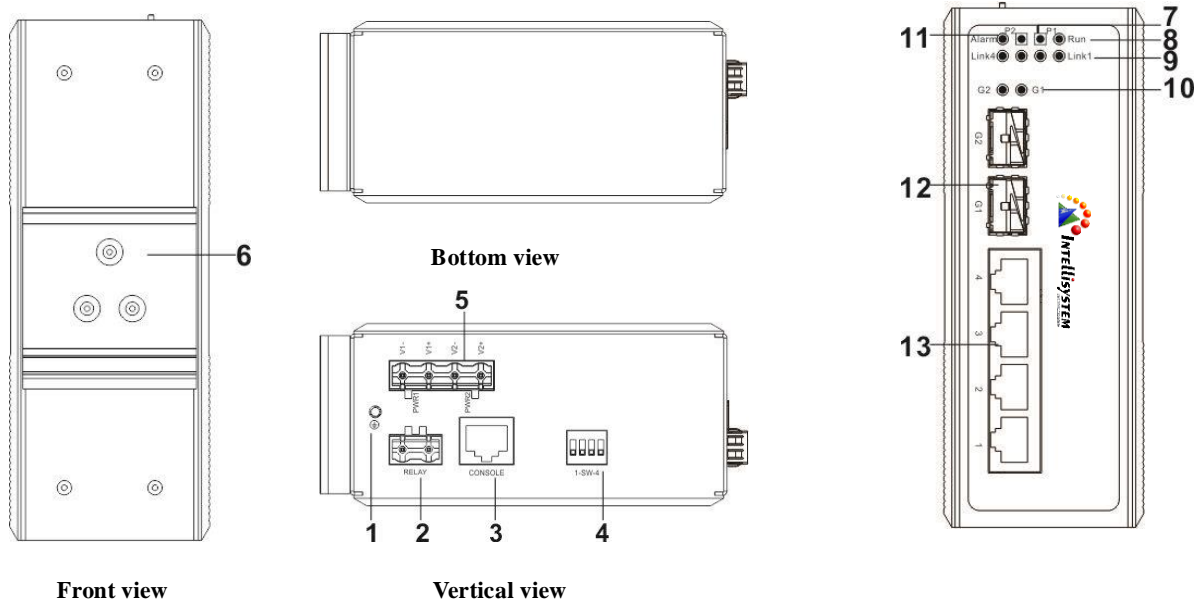
- Industrial Ethernet switch x1
- User manual x1
- CD x1
- Certificate x1
- Warranty card x1

If you find that the device is damaged or any parts of it is missing during transportation, please notify the Company or the Company's distributor, we will give you proper solution as soon as possible.

【Features】

- Support IEEE802.3/IEEE802.3u/IEEE802.3x/IEEE802.3z/IEEE802.1Q/IEEE802.1p/IEEE802.1D/IEEE802.1W
- SWRing^{TM} redundant network patent technology (Fault recovery time <20ms)
- Support RSTP, recovery time<50ms
- Support WEB configuration
- Support MAC address learning, aging automatic
- Support port statue display, data update
- Support static IGMP, dynamic IGMP
- Support flow statistics
- Support bi-directional port mirroring
- Support rate control, Broadcast storm control
- Support for import and export configuration file
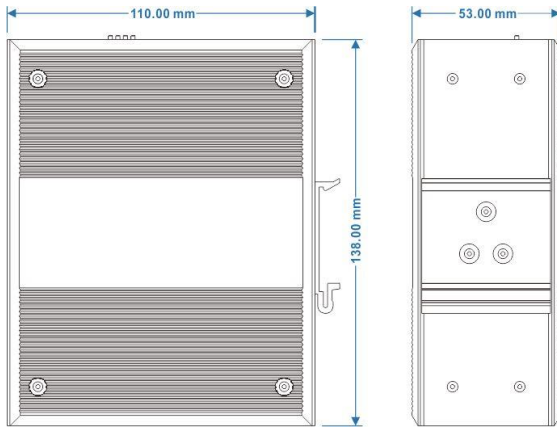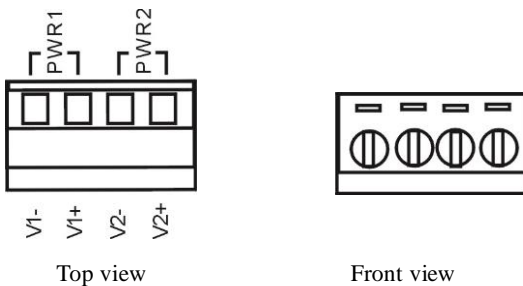- Support relay alarm output

【Panel Layout】

Bottom view

Front view   Vertical view

1、Ground screw (Protect ground)

2、Relay alarm output

3、Console port

4、Dial switch

5、4 bit power input terminal block

6、Din-rail mount

7、Power indicator（P1/P2）

8、System running indicator

9、Link1~9 Ethernet port connection indicator

10、Fiber port connection indicator (G1/G2)

11、System alarm indicator

12、 1000Base-X SFP fiber port

【**Dimensions**】

Unit（mm）

【**Power input**】

Top view   Front view

IT-ES716-IM-2GS-P(12~48VDC) top panel provided 4 bit industrial terminal block, power input is 24VDC(12~48VDC)，the sign of the terminal block is V1-, V1+, V2-, V2+, it is redundant power input, both of them are 12~48VDC.

IT-ES716-IM-2GS-P(12~48VDC) DC power input had redundant 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 system broke, the device can work uninterruptible, built-in overcorrect protection, Reverse connection protection

Note：1, Power ON: please insert the power cable's terminal block into device's power pot at first and then insert the power supply.
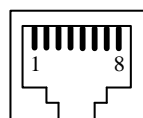**2, Power OFF, please pluck the plug of the power supply and then strike the terminal block parts.**

【Communication interfaces】

The switch provided 4 ports 10Base-T/ 100 Base -TX and 2 ports 1000Base-X SFP gigabit port.

10/100BaseT(X) Ethernet port

The pin out of RJ45 port display as below, connect by UTP or STP. The connect distance is no more than 100m. 100Mbps is used 120Ω of UTP 5, 10Mbps is used 120Ω of UTP 3,4,5.
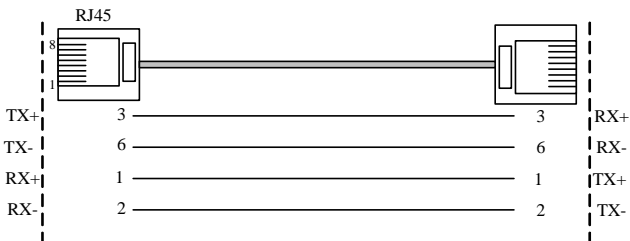
RJ45 port support automatic MDI/MDI-X operation. Can connect the PC, Server, Converter and HUB .Pin 1,2,3,6 Corresponding connection in MDI. 1→3,2→6,3→1,6→2 are used as cross wiring in the MDI-X port of Converter and HUB. 10Base-T/100Base-TX are used in MDI/MDI-X, the define of Pin in the table as below.
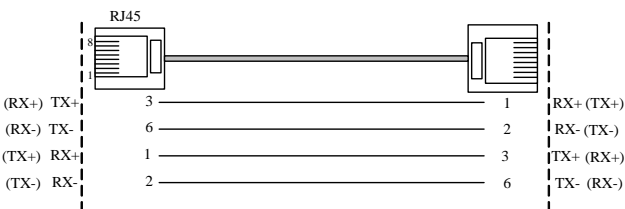
NO.	MDI signal	MDI-X signal
1	TX+	RX+
2	TX-	RX-
3	RX+	TX+
6	RX-	TX-
4,5,7,8	—	—

Note: "TX±"transmit data±, "RX±"receive data±, "—"not use

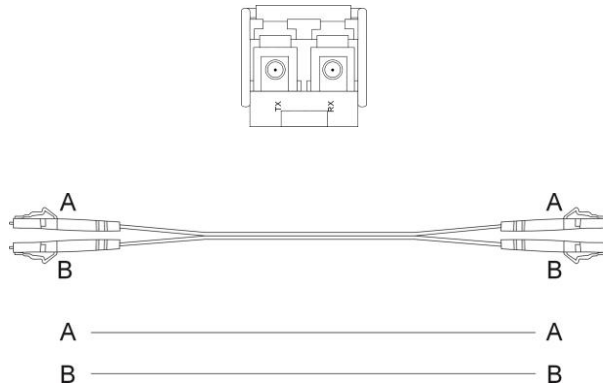MDI (straight-through cable):

MDI-X (Cross over cable):

MDI/MDI-X self-adaption function can let user did not think about the type of Ethernet cable (Through line or cross wire), can connect IT-ES716-IM-2GS-P(12~48VDC) by through line or cross wire directly.

1000BaseSFP port (mini-GBIC)

IT-ES716-IM-2GS-P(12/48VDC)'s 1000BaseSFP port adopted gigabit mini-GBIC optic fiber, can choice different type fiber according to different transfer distance, fiber port must use for pair, TX port is fiber transmit side, connect to other device's RX receive side, RX port is fiber receive side, connect to other device's TX transmit side. Fiber port support off-line indicator, can effective increase the reliability of network running。

Suggestion: please make a sign for the optic fiber (Figure as follows: A-A, B-B), easy to use

【**LED Indicators**】

LED indicator in front panel of the switch monitor working status, it is convenience to find the problem, and the function of each LED is described in the table as below.

LED system statue		
LED	Statue	Description
P1（Green）	ON	PWR1 connect and running normal
	OFF	Power supply have no connection or unwonted
P2（Green）	ON	PWR2 connect and running normal
	OFF	Power supply have no connection or unwonted
Link1~4	ON	Fiber port made effective connection
	Blinking	Fiber port is in active statue
	OFF	Fiber port did not make effective connection
G1 (Green)	ON	G1 port made effective connection
	Blinking	G1 port is in active statue
	OFF	G1 port did not make effective connection
G2 (Green)	ON	G2 port made effective connection
	Blinking	G2 port is in active statue
	OFF	G2 port did not make effective 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 equipment are prepared or not.

Installation require as below

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. Screw, nut, tools provide by yourselves.

5. Power need: power inputs (12~48DC）

6. Environment: -40°C to 75°C

   Storage Temperature: -40°C to 85°C

   Relative humidity 10% to 95%

Wiring Requirements

Wiring need to meet the following requirements:

- It is needed to check whether the type, quantity and specification of cable match the requirement before cable laying;

- It is needed to check the cable is damaged or not, factory records and quality assurance booklet before cable laying;

- The required cable specification, quantity, direction and laying position need to match construction requirements, and cable length depends on actual position;

- All the cable cannot have break-down and terminal in the middle;

- Cables should be straight in the hallways and turning;

- 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;

- 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;

- 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;

  It should have corresponding simple signal at both sides of the cable for maintaining.

【Specifications】

Technology:

Standard: IEEE802.3、IEEE802.3u、IEEE 802.3x、IEEE802.1Q、
IEEE802.1p、IEEE802.1D、IEEE802.1W

Agreement: ARP、ICMP、TCP、UDP、DHCP、DNS、HTTP、Telnet,、SW-Ring、RSTP、SNMP

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

Function:

Function: SW-Ring^{TM}、QOS、802.1QVLAN、RSTP、SNMP、Port aggregation,、Static multicast Filtering、Port mirroring、Bandwidth Management、Broadcast storm suppression、Port traffic statistics、
Online upgrade、Upload and download configuration files、User login system.

SW-Ring^{TM} Support, Single, Couple, Chain, Dual homing

Ring network structure

Exchange property：

Fast forward speed: 148810pps

Gigabit Ethernet forwarding speed: 1488100pps

The maximum filtering rate fast: 148810pps

The maximum speed of Gigabit 1488100pps filter

Transmission: store and forward

Bandwidth: 5.6G switching system

The MAC address table: 8K

Cache: 1M

Interfaces:

Gigabit SFP port：1000Base-X, LC

Ethernet port: 10Base-T/ 100Base-TX, RJ45 port, full/half duplex mode, MDI/MDI-X

Console port: CLI serial execution command code debugging

Alarm port: 2 core spacing of 7.62mm terminal,1 relay alarm

output,

Current loading capacity of 1A@24VDC

Led indicators:

Running lights: Run

Interface indicating lamp: Link (1~4/G1~G2)

Power indicator: P1/P2

Alarm indication lamp: Alarm

Transfer distance:

Twisted-cable: 100M (CAT5/CAT5e)

Multi-mode: 1310nm, 5Km

Single mode: 1310nm, 20Km

1310nm, 40Km

1310nm, 60Km

1550nm, 80Km

Power supply:

Power input: 24VDC（12～48VDC）

Terminal block: 4 bit 7.62mm separation distance

Supports dual power alarm information input

Supports dual power supply redundancy

Support built-in overcurrent protection of 4.0A

Support power input no polarity, connection reverse protection

Power consumption:

The no-load power: 2.2W@24VDC

Full load power: 5.5W@24VDC

Environmental:

Working temperature: -25℃~70℃

Storage temperature: -40℃~85℃

Relative humidity: 5%~95%（no condensing）

Mechanical:

Shell: IP30, high strength iron shell.

Installation: DIN Rail

Dimension (W×H×D): 138mm×110mm×53mm

Standards：

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

EMS： EN61000-4-2 (ESD) ，Level 4

EN61000-4-3 (RS) ，Level 3

EN61000-4-4 (EFT) ，Level 4

EN61000-4-6 (CS) ，Level 3

EN61000-4-8，Level 5

Shock: IEC 60068-2-27

Free fall: IEC 60068-2-32

Vibration: IEC 60068-2-6

Warranty

Warranty time: 5 years

Certificate:

CE, FCC, RoHS, UL508 (Pending)