3onedata®

IES7110-3GS
Industrial Ethernet Switch
User Manual

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【Summarize】

The IES7110-3GS Gigabit managed redundant industrial Ethernet switch is equipped with up to 3 Gigabit Ethernet ports (7-Port 10/100Base-T(X) + 3-Port Gigabit SFP slots), making it ideal for building a Gigabit SW-Ring(No.8,No.9), but leaving a spare Gigabit port for uplink use. The Ethernet redundant SW-Ring (recovery time < 20 ms) can increase system reliability switches and the availability of your network backbone. The IES7110-3GS is designed with industrial standard, can be suited to the applications in different industrial environments.

The switch supports numerous intelligent network management functions, including such as QoS, VLAN, Port Trunking, velocity configuration and alarm enabling functions.

【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 × 1
- Documentation and software CD × 1
- User manual × 1
- DIN-Rail mounting kit × 1
- Warranty card × 1

【Feature】

Advanced Industrial Ethernet Networking Capability

- Store and forward. 8k address. Support MAC address filtrate struction
- SW-Ring (recovery time < 20 ms at full load)
- Port-based VLAN, IEEE 802.1Q VLAN to ease network planning
- Support QoS-IEEE802.1p
- IGMP Snooping
- Port Trunking for optimum bandwidth utilization
- Lock port function for blocking unauthorized access based on MAC address
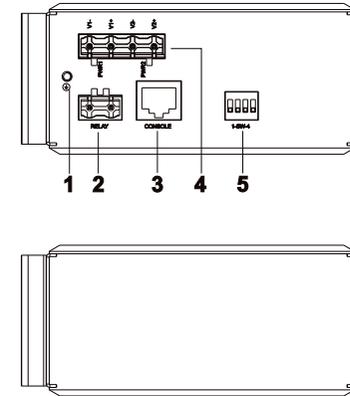- Port mirroring for online debugging

- Bandwidth management prevents unpredictable network status

Designed for Industrial Applications

- Industrial-grade standard design
- Redundant, dual 24VDC power inputs(12~48VDC), opposite connection protection
- Support 1 alarm output
- Port link, ring fault/abnormity alarm indication
- IP 40 protection, rugged high-strength metal case
- -40 to 75°C operating temperature range
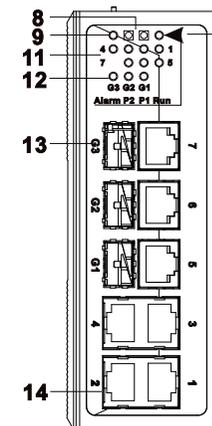- DIN-Rail or panel mounting ability
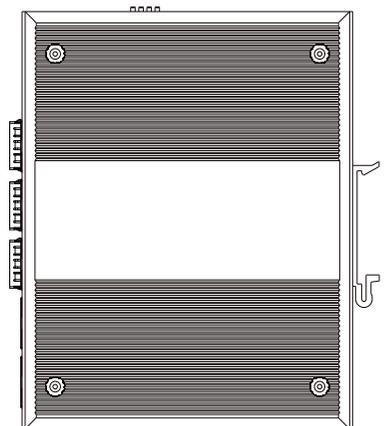
【Panel layout】

**Vertical view and bottom view**　　**Rear view**
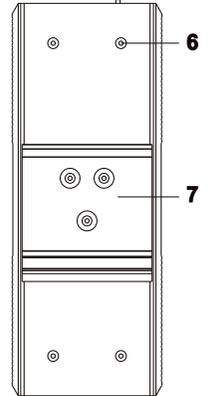

Front view　　**Side view**

1. Ground screw
2. 2-pin terminal block for relay output
3. Console port
4. Power input terminal block
5. DIP switches for default factory
6. Screw holes for Wall Mounting Kit
7. DIN-Rail mounting kit
8. Power indicator
9. Relay alarm LED
10. System running LED
11. Fast Ethernet Link/ACT LEDs
12. Gigabit Ethernet Link/ACT LEDs
13. Gigabit SFP port
14. 10Base-T /100Base-TX Ethernet port

【Dimension】

Unit (mm)
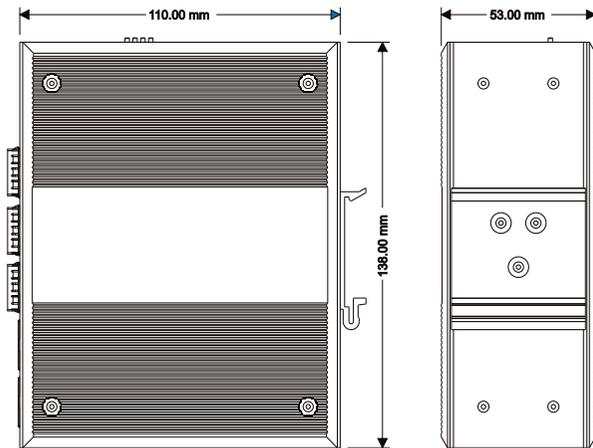
【Power supply input】
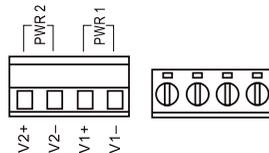
The product top panel provided 4 bit power supply input terminal block, support DC input. DC power supply input supported redundancy function, provided PWR1 and PWR2

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】

Top panel provided 4 bits DIP switch to do function configure (ON to enable effective), 1 and 4 keep for future function. 2 is recovery default factory. 3 is for upgrade. Please power off and power on when you change the status of DIP switch.

【Relay connection】
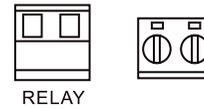
Relay access terminals in the top panel of the device. Between the two terminal relay, as an open circuit state in normal non alarm state, when there is any alarm information to the closed state. The two terminal block connector are used to detect both power failure and port failure. The two wires attached to the Fault contacts form an open circuit when the device has lost power supply from one of the DC power inputs or one of the ports is failure.

【Console port】

This switch provided 1pcs procedure test port based in serial port. It adopts RJ45 interface, located in top panel, can configure related command through RJ45 to DB9 female cable.
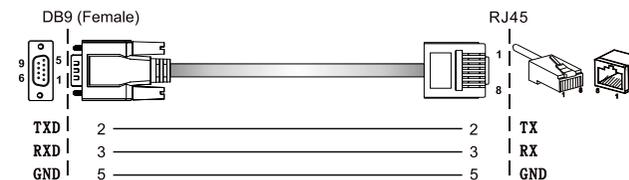
【Communication connector】

10/100BaseT(X) Ethernet port

The pinout define 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.
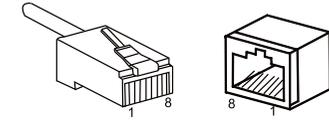

RJ 45 port support automatic MDI/MDI-X operation. Can connect the PC, Server, Converter and HUB .Pin 1,2,3,6 Corresponding connections in MDI. 1→3, 2→6, 3→1, 6→2 are used as cross wiring in the MDI-X port of Converter and HUB. 10Base-T/100Base-TX are used in MDI/MDI-X, the define of Pin in the table as below.
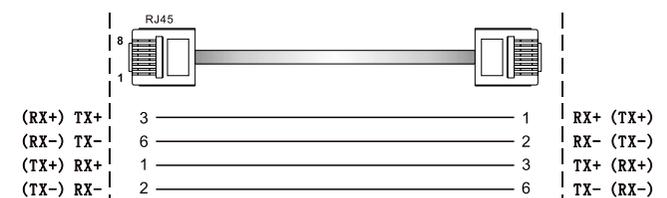
NO.	MDI signal	MDI-X signal
1	TX+	RX+
2	TX-	RX-
3	RX+	TX+
6	RX-	TX-
4, 5, 7, 8	—	—

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

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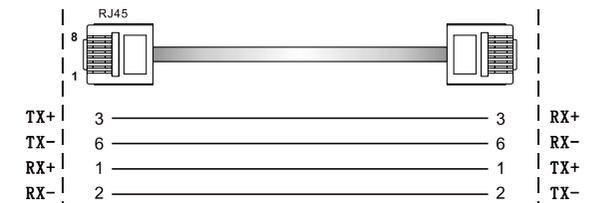
10/100Base-T(X) MDI-X (Cross over cable)

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

1000Base SFP fiber port(mini-GBIC)

1000Base-X SFP fiber port adopts gigabit mini-GBIC transmission, can choice different SFP module according to different transfer distance. Fiber interface must use for pair, TX port is transmit side, must connect to RX (receive side). The fiber interface support loss line indicator.
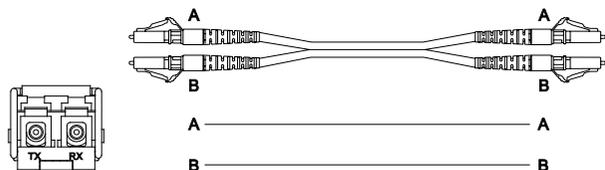
Suppose: If you make your own cable, we suggest labeling the two sides of the same line with the same letter (A-to-A and B-to-B, shown as above, or A1-to-A2 and B1-to-B2).

【LED Indicator】

LED indictor 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	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.
Run	ON/OFF	System is not running well
	Blinking	System is running well

Link/ACT (1~7/G1~G3)	ON	Port connection is active
	Blinking	Data transmitted
	OFF	Port connection is not active

【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
5. Environment: working temperature: -40～75℃
     Storage Temperature: -40～85℃
     Relative humidity 5%～95%
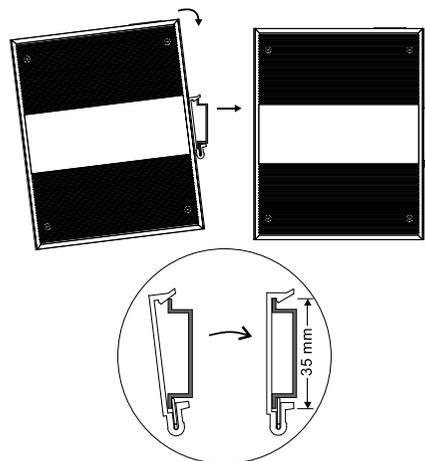
DIN Rail Installation

In order to use in industrial environments expediently, the product 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: Support IEEE802.3, IEEE802.3u, IEEE802.3x, IEEE802.3z/ab, IEEE802.1Q, IEEE802.1p, IEEE802.1D/W, IEEE802.1ad

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

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

Function

Switch function: SW-Ring, QOS, 802.1QVLAN, SNMP, Port trunking, static multicast filter, port mirroring, bandwidth management, broadcast storm control, port flow statistics, upgrade online, up and download configuration file, user name access system

SW-Ring: Support Single, Couple, Chain, Dual homing

Exchange attributes:

100M forward speed: 148810pps

1000M forward speed: 1488100pps

Transmit mode: store and forward

System exchange bandwidth: 7.6G

MAC address table: 8K

Memory: 1M

Interface

Electric port: 10Base-T/100Base-TX/1000Base-TX auto speed control, Half/full duplex and MDI/MDI-X auto detect.

Gigabit SFP port: 1000Base-X, SFP slot

Console port: debug serial port carry out CLI command

Alarm port: 2 bit 7.62mm 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

Power supply

Input voltage: 12～48VDC

Type of input: 4 bit 7.62mm pitch terminal block

Unload consumption: 2.6W@24VDC

Full load consumption: 7.1W@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 mounting

Weight: 790g

Size (W×H×D): 138mm×53mm×110mm

Industry Standard

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

EMS: EN 61000-4-2 (ESD), Level 4
EN 61000-4-3 (RS), Level 3
EN 61000-4-4 (EFT), Level 4
EN 61000-4-5 (Surge), Level 3
EN 61000-4-6 (CS), Level 3
EN 61000-4-8, Level 5

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