



IES7110-3GS

7+3G-port Gigabit managed Ethernet Switch

Hardware Installation Guide

Introduction:

The IES7110-3GS Gigabit managed redundant industrial Ethernet switch is equipped with up to 3 Gigabit Ethernet ports(7-port FE and 3-port GbE), 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 series is designed with industrial standard, can be suited to the applications in different industrial environments.

The IES7110-3GS series supports numerous intelligent network management functions, including such as QoS, VLAN, Port Trunking, velocity configuration and alarm enabling functions.

Packing List:

The IES7110-3GS switch is shipped with following items.

1. Ethernet switch IES7110-3GS (plus terminal block) × 1
2. Hardware Installation Guide × 1
3. CD-ROM with Windows Utility × 1
4. Product Warranty Statement × 1
5. DIN-Rail setting fittings(wall mounting for optional)

Features:

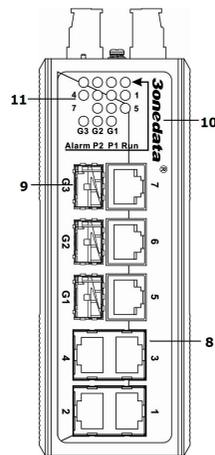
Designed for Industrial Applications

1. Industrial-grade standard design, comply with IEC61850
2. Redundant, dual 24VDC power inputs(12~48VDC), opposite connection protection
3. Support 2 power signal input I/O ports and 1 alarm output I/O port
4. Port link, ring fault/abnormity alarm indication
5. IP 30 protection, rugged high-strength metal case
6. -40 to 85°C operating temperature range
7. DIN-Rail or panel mounting ability

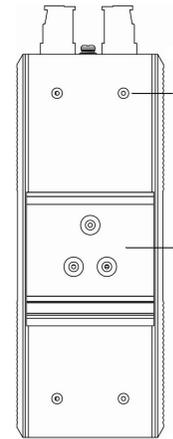
Advanced Industrial Ethernet Networking Capability

1. Store and forward.8k address. Support MAC address filtrate structure
2. SW-Ring(recovery time < 20 ms at full load)
3. Port-based VLAN, IEEE 802.1Q VLAN to ease network planning
4. Support QoS-IEEE802.1p/1Q
5. IGMP Snooping
6. Port Trunking for optimum bandwidth utilization
7. Lock port function for blocking unauthorized access based on MAC address
8. Port mirroring for online debugging
9. Bandwidth management prevents unpredictable network status

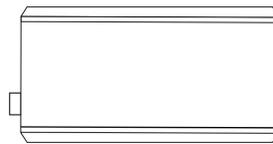
Panel Layout:



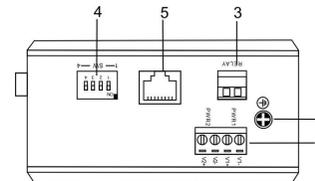
front panel



rear panel



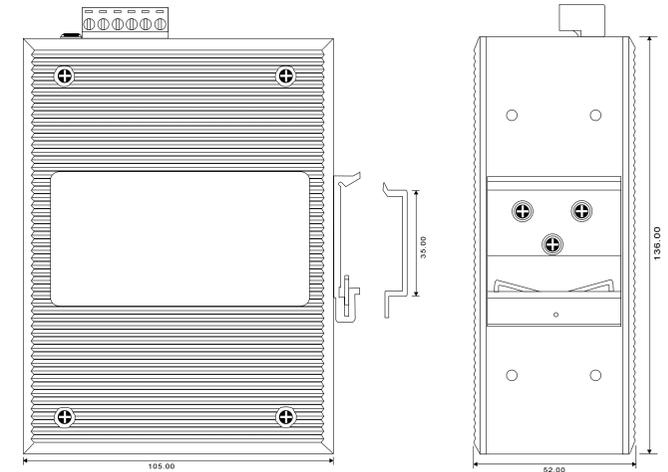
below panel



top panel

1. Ground screw
2. PWR1/PWR2 power input
3. Relay output terminal block
4. DIP switch
5. CONSOLE port
6. DIN-Rail mount
7. Wall mount screw hole
8. 10Base-T /100Base-TX port
9. 1000Base-FX SFP port
10. Company logo, series
11. LED indicator

Units (mm)



Communication connector:

IES7110-3GS series have 7 10/100BaseT(X) Ethernet ports(RJ45) and 3 1000BaseSX/LX/LHX/ZX (LC connector) fiber ports.

10/100BaseT(X) Ethernet port

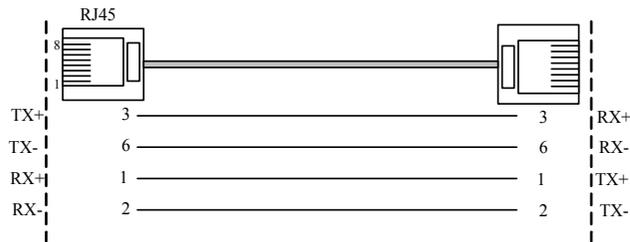
The pinout of RJ45 port display as below, connect by UTP or STP. The connect distance is no more than 100m. 100Mbps is used 100 Ω of UTP 5 , 10Mbps is used 100 Ω of UTP 3,4,5.

RJ 45 port support automatic MDI/MDI-X operation. can connect the PC, Server, Converter and HUB .Pin 1,2,3,6 Corresponding 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.

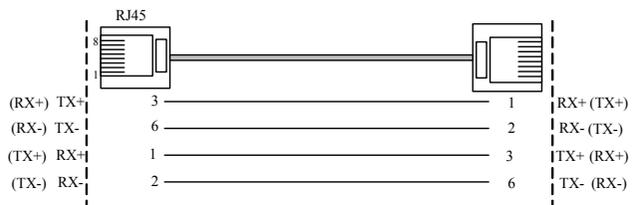
	NO.	MDI signal	MDI-X signal
	1	TX+	RX+
	2	TX-	RX-
	3	RX+	TX+
	6	RX-	TX-
	4,5,7,8	—	—

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

MDI(straight-through cable)



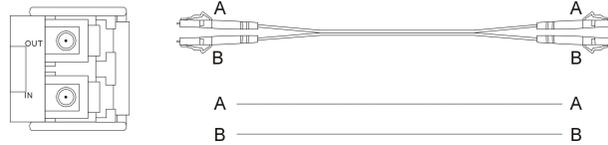
MDI-X(Cross over cable)



1000BaseSX/LX/LHX/ZX port

1000BaseSX/LX/LHX/ZX adopts SFP(mini-GBIC) optic fiber interface(No.8, No.9 are used for SW-Ring), need use in pairs, TX port is fiber send side, connect another long-range light of interface fiber receive end RX; RX port is fiber receive side , connect long-range same fiber send side :

Optic fibers spent both ends mark the label (the following picture show: A-A, B-B, can also mark another: A1-A2, B1-B2), in order to use.



LED Indicator:

LED indicator light on the front panel of IES7110-3GS Series .the function of each LED is described in the table as below.

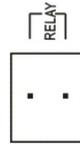
System indication LED		
LED	State	Description
PWR1	ON	Power is being supplied to power input PWR1 input
	OFF	Power is not being supplied to power input PWR1 input
PWR2	ON	Power is being supplied to power input PWR2 input
	OFF	Power is not being supplied to power input POWER2 input
Alarm	ON	When the alarm is enabled, power and the port's link is inactive.
	OFF	Power and the port's link is active, not alarm
Run	ON/OFF	Switch is unwonted
	Blinking	Switch is active

1000BaseSX/LX/LHX/ZX port state LED (8,9,10)		
Link8,9,10	ON	FX port is active
	Blinking	Data is being transmitted
	OFF	FX port is inactive
10/100BaseT(X) Ethernet port state LED		
10/100M (green)	ON	100Mbps is active (100Base-TX)
	OFF	10Mbps is active (10Base-T)
Link/ACT (green)	ON	TP port is active
	Blinking	Data is being transmitted
	OFF	TP port is inactive

Relay contact:

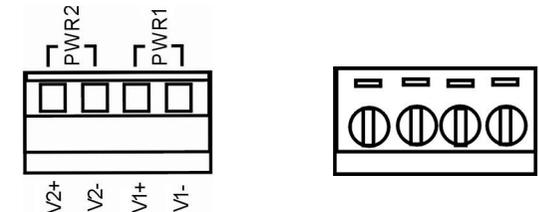


RELAY



The input terminal block is located in top panel of the device and it is also the contact of the device alarm. It is often off when no alarm happens, or it is turned on. IES7110-3GS-3GS supports 1 relay information output to connect alarm indicator or alarm buzzer to remind of operator in time in case of something happened.

Power Input:



IES7110-3GS-3GS owns redundant power input, which provides two terminal blocks (3 bits) for PWR1 and PWR2 input.

The redundant power can be used independently. PWR1 and PWR2 can supply power at the same time, once either of these two power fails, another power can act as backup automatically to ensure reliability of the network. It also supports reverse polarity connection.

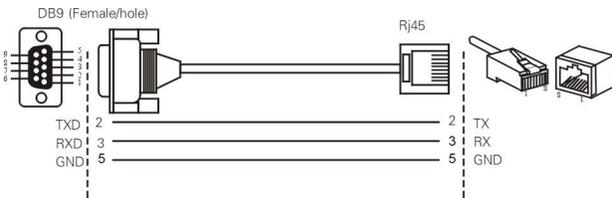
Switch Settings:



Provide 4 bit switch for function setting (ON is enable): 1(ISP) is DOWNLOAD PROGRAM, 2 is RESUME DEFAULT, 3 and 4 is blank (NC). When the switch is setup, must be restart.

Debugging port:

IES7110-3GS series provide one Debugging port (RJ45 type), on the top panel, manage the system with PC by RJ45-DB9F adapter.



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.

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 ,tool provide for yourself.

5. Power need: Redundant, dual 24VDC power inputs(12~48VDC)

6. Environment: -40°C to 85°C

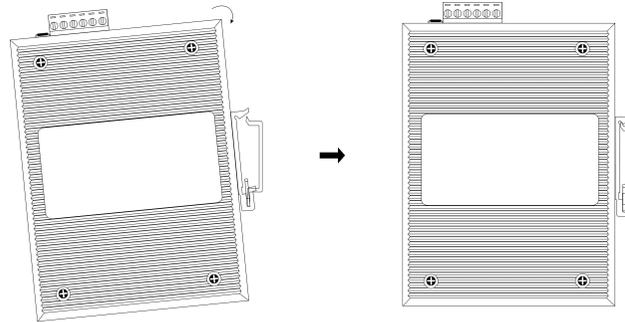
Storage Temperature: -45°C to 85°C

Relative humidity 5% to 95%

DIN-Rail Installation

In order to use in industrial environments expediently, IES7110-3GS series adopt 35mm DIN-Rail installation, the installation steps as follows:

1. Examine the DIN-Rail attachment
2. Examine DIN Rail whether be firm and the position be 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

Be sure to disconnect the power cord before installing and/or wiring your Ethernet Switch.

Calculate the maximum possible current in each power wire and common wire. Observe all electrical codes dictating the maximum current allowable for each wire size. If the current goes above the maximum ratings, the wiring could overheat may causing serious damage to your equipment. You should also pay attention to the following items:

1. Use separate path to route wiring for power and devices. If power wiring and device wiring paths must cross make sure the wires are perpendicular at the intersection point.
2. NOTE: Do not run signal or communications wiring and power wiring in the same wire conduit. To avoid interference, wires with different signal characteristics should be routed separately.
3. You can use the type of signal transmitted through a wire to determine which wires should be kept separate. The rule of thumb is that wiring that shares similar electrical characteristics can be bundled together.
4. Keep input and output wiring separated. It is strongly advised that you label wiring to all devices in the system when necessary.

Specifications:

Interface

RJ45 Ports: 10/100BaseT(X) auto connection, Full /Half duplex or force work mode, and support MDI/MDI-X connection

Fiber Ports: 1000BaseSX/LX/LHX/ZX (LC connector)

Single-mode: 20, 40, 60, 80, 120Km, optional

Multi-mode: 0.5Km

Wavelength: 850 nm(MM), 1310 nm(SM), 1550 nm(SM)

Debugging Port: Based serial network management (RS-232), RJ45

Alarm output interface: One relay alarm output. Support power, port link and ring network alarm .

Indicator: Port link, ring fault/abnormity alarm indication 10/100M Rate, run indication

Technology

Standards: IEEE802.3, IEEE802.3x, IEEE802.3u, IEEE802.1Q, IEEE802.1p

Transmit Rate: 148810pps

Max Rate of Filtrate: 148810pps

Processing type: Store and Forward

System exchange bandwidth: 7.4G

Support 8K MAC address

Port-Based VLAN and 802.1Q VLAN

Relay

Max voltage: DC30V

Max current input: 1A

Power

Input Voltage: 24VDC (12VDC~48VDC)

Overload Current Protection

Support dual power backup

Support dual power alarm input

Mechanical

Dimensions: 138mm×53mm×110mm (H×W×D)

Casing: IP30 protection, metal case

Installation: DIN-Rail, Wall Mounting

Weight: 800g

Environmental

Operating Temperature: -40 to 85°C

Storage Temperature: -45°C to 85°C

Ambient Relative Humidity: 5 to 95% (non-condensing)

Approvals

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

EN61000-4-5 (Surge), Level 3

EN61000-4-6 (CS), Level 3

EN61000-4-8, Level 5

EN61000-4-12

Shock: IEC 60068-2-27

Free Fall: IEC 60068-2-32

Vibration: IEC 60068-2-6

Warranty: 5 years

Certifications:

