

IES615-2D Series Industrial Ethernet Switch User Manual

【Summarize】

IES615-2D series is an integrated serial server function of the managed industrial Ethernet switches. The industrial Ethernet switch consists of 5 Fast Ethernet ports and 2 serial ports (RS-232 or RS-485/422). Support Fast Ethernet copper ports and optical fiber port option. It adopted SW-Ring™ redundant technology (Recovery time<20ms), users can set the redundant easily to increase network reliability, furthermore. It adopted no fan, low power consumption design, IP30, corrugate high strength iron shell, the performance is more steadily. It accorded with CE, FCC standard and industrial grade design, DIN rail installation and wide operating temperature (-40~75℃), it can satisfied some kinds of industrial environment, it can provide reliable and quickly solution for your Ethernet device.

【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

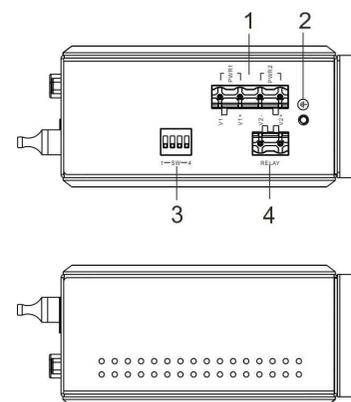
【Features】

- IEEE802.3, IEEE802.3u, IEEE 802.3x, IEEE802.1D/W
- Support SW-Ring™ redundant network patent technology (Faulty recovery time<20ms)
- Support 2 port RS-232 or RS-485/RS-422 serial device server
- Support based on socket application access
- Support TCP Sever, TCP Client and UDP based mode; TCP Sever and UDP advanced mode
- Support RS-485 power and signal isolation AC2500V
- Support RSTP, IGMP, port trunking and port mirroring

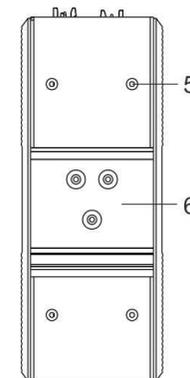
- Support Web, SNMP management
- Support 2K MAC address table
- Support 2 power supply input and 1 relay alarm output
- Support QOS, 802.1Q VLAN
- High strength iron shell, IP30 protection
- Industrial grade design
- Redundant 24VDC power supply input (12~48VDC)
- -40~75℃ working temperature
- DIN-rail, wall mounting installation

【Panel layout】

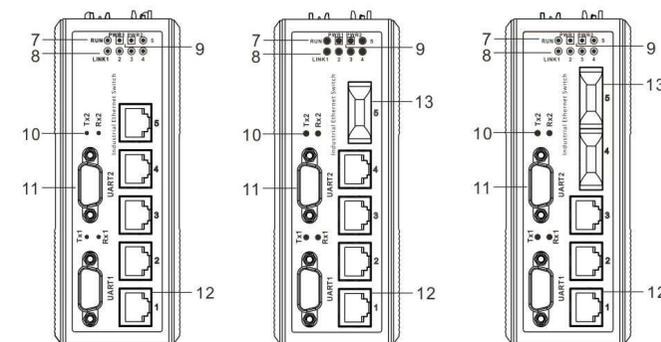
Vertical view and bottom view

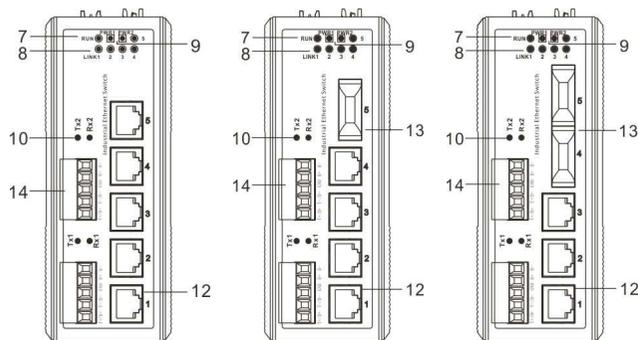


Rear view



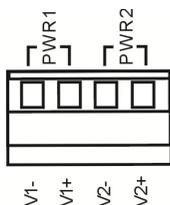
Front panel view





1. Power input terminal block
2. Ground screw
3. 2-pin terminal block for relay output
4. DIP switches for default factory
5. Screw holes for Wall Mounting Kit
6. DIN-Rail mounting kit
7. System running LED
8. Link/ACT LEDs
9. Power indicator (PWR1, PWE2)
10. Serial port transmits and receives data LED
11. RS-232 serial port (DB9M)
12. 10Base-T /100Base-TX Ethernet port
13. 100Base-FX fiber port
14. RS-485/422 serial port (5 bits terminal block)

【Power supply input】

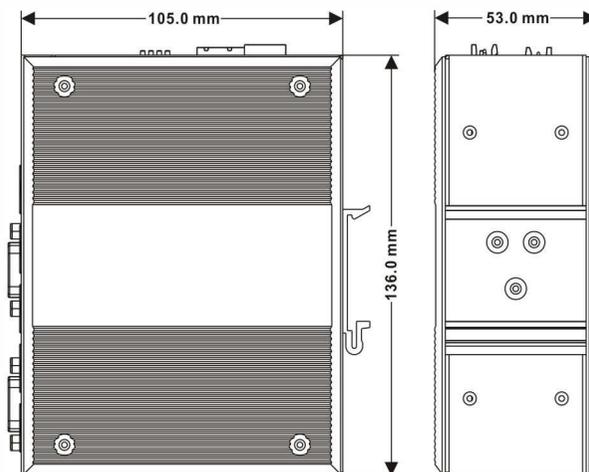


The switch have redundant power input, provides one terminal block (4 bits) for PWR1 and PWR2 input. The redundant power can be used single and used two self-governed power to supply to the system, PWR1 and PWR2 input at the same time, when neither of these two power fails, the other power acts as a

backup, and automatically supplies power needs, ensure running Ethernet reassuring. Voltage input range is 12~48VDC (terminal block defined as: V1-, V1+, V2-, V2+).

【Dimension】

The series of switches are the same size, and the number of the Ethernet interface is different. Unit (mm)



【DIP Switch】



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

【Relay connection】

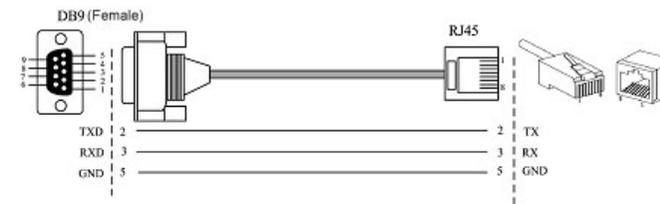


The relay owns two contacts of the terminal block on the top panel of the Switch series. It is used to detect both power failure and port failure. The open circuit state in normal non alarm state, when there is any alarm information to the closed state. The relay

can external alarm lights or alarm buzzer or external switch signal acquisition device in order to timely notify operators when an alarm occurs.

【Console port】

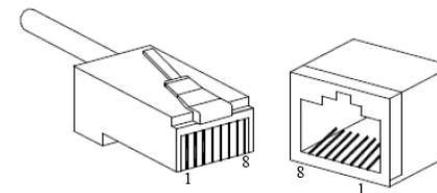
This series product provided 1pcs procedure test port based in serial port. It adopts RJ45 interface, located in top panel, can configure the CLI command through RJ45 to DB9 female cable.



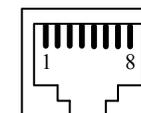
【Communication connector】

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 120 Ω of UTP 5, 10Mbps is used 120 Ω of UTP 3, 4, 5.



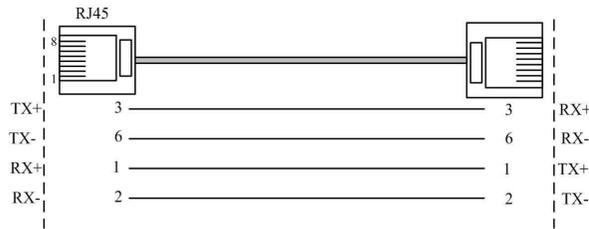
RJ 45 port support automatic MDI/MDI-X operation. can connect the PC, Server, Converter and HUB .Pin 1,2,3,6 Corresponding connection in MDI. 1→3, 2→6, 3→1, 6→2 are used as cross wiring in the MDI-X port of Converter and HUB. 10Base-T/100Base-TX are used in MDI/MDI-X, the define of Pin in the table as below.



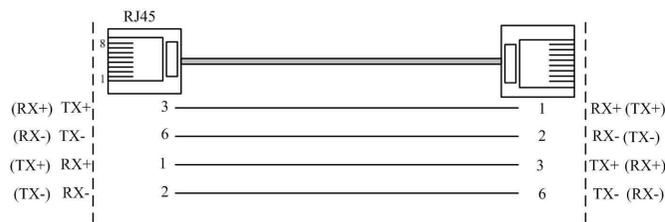
NO.	MDI signal	MDI-X signal
1	TX+	RX+
2	TX-	RX-
3	RX+	TX+
6	RX-	TX-
4, 5, 7, 8	—	—

Note: “TX±” Transmit Data±, “RX±” Receive Data±, “—” Not use.

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



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



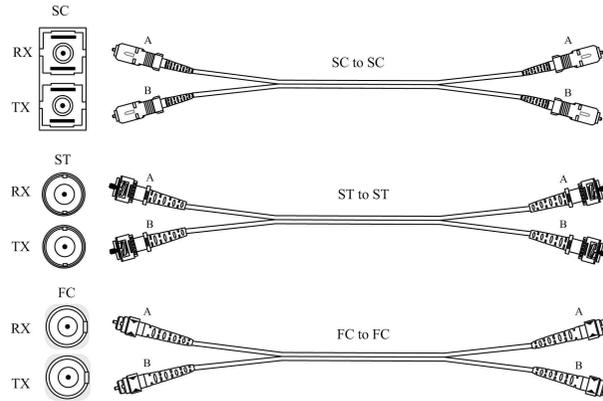
MDI/MDI-X auto connection makes switch easy to use for customers without considering the type of network cable.

100Base-FX Fiber port

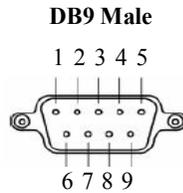
100Base-FX full-duplex SM or MM port, SC/ST/FC type .The fiber port must be used in pair, TX (transmit) port connect remote switch’s RX (receive) port; RX (receive) port connect remote switch’s TX (transmit) port.

The optical fiber connection supports the line to instruct enhance the reliability of network effectively.

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).



RS-232 port:



PIN	RS-232
1	DCD
2	RxD
3	TxD
4	DTR
5	GND
6	DSR
7	RTS
8	CTS
9	RI

RS-485/422 port:



PIN	RS-422	RS-485
1	T+	D+
2	T-	D-
3	GND	GND
4	R+	/
5	R-	/

【LED Indicator】

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

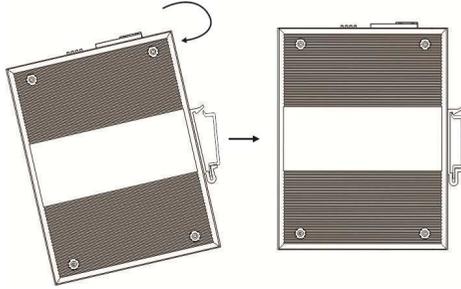
System indication LED		
LED	State	Description
PWR1	ON	Power is being supplied to power input PWR1
	OFF	Power is not being supplied to power input PWR1
PWR2	ON	Power is being supplied to power input PWR2
	OFF	Power is not being supplied to power input PWR2
Run	ON/OFF	System is not running well
	Blinking	System is running well
Link/ACT (1~5)	ON	Port connection is active
	Blinking	Data transmitted
	OFF	Port connection is not active
TX (1~2)	Blinking	Transmit data unwonted
	OFF	Transmit data wonted
RX (1~2)	Blinking	Receive data unwonted
	OFF	Receive data wonted

【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.

- Power: Redundant, dual 12-48VDC power input
- Environment: working temperature: -40~75°C
Storage Temperature: -40~85°C
Relative humidity 5%~95%



DIN Rail Installation

In order to use in industrial environments expediently, the switch adopt 35mm DIN-Rail installation, the installation steps as below:

- Examine the DIN-Rail attachment
- Examine DIN-Rail whether be firm and the position is suitability or not.
- Insert the top of the DIN-Rail into the slot just below the stiff metal spring.
- The DIN-Rail attachment unit will snap into place as shown below.

Wiring Requirements

Cable laying 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.

【Specification】

Technology

Standard: Support IEEE802.3, IEEE802.3u, IEEE802.3x, IEEE802.1Q, IEEE802.1p, IEEE802.1D/W

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

Flow control: IEEE802.3x, back pressure control

Function

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

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

Exchange attribute

100M forward speed: 148810pps

Transmit mode: store and forward

Switching fabric capacity: 1.0Gbps

MAC address table: 2K

Memory: 1Mbit

Interface

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

100M optic fiber port: 100Base-FX, SC/ST/FC connector

Alarm port: 2 bit 7.62mm terminal block,
1 channel relay alarm output

Serial Port: RS-232 (DB9 male) or RS-485/422 (terminal block)

Serial

RS-232 signal: DCD, RXD, TXD, RTS, CTS, DTR, DSR, GND, RI

RS-485 signal: D+, D-, GND

RS-422 signal: T+, T-, GND, R+, R-

Parity: None, Even, Odd, Space, Mark

Data bit: 5bit, 6bit, 7bit, 8bit

Stop bit: 1bit, 1.5bit, 2bit

Band rate: 300~115200bps

RS-232 connector: DB9 male

RS-485 connector: 5 bit terminal block

RS-485/422 power isolation and signal isolation: AC2500V

Transfer distance

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

Multi-mode: 1310nm, 2Km

Single-mode: 1310nm, 20/40/60Km

1550nm, 80/100/120Km

RS-485/422: 1200m

RS-232: 15m

LED indicator

Run indicator: Run

Power supply indicator: PWR1, PWR2

Ethernet interface indicator: Link (1~5)

Serial port indicator: Tx (1~2), Rx (1~2)

Power supply

Input voltage: 12~48VDC

Type of input: 4 bit 7.62mm pitch terminal block

Over-current protection: 4.0A

RS-485 power isolation and signal isolation: AC2500V

Consumption

➤ IES615-1F-2D (RS-232):

Unload consumption: 1.8W@24VDC

Full load consumption: 2.4W@24VDC

➤ IES615-1F-2DI (RS-485):

Unload consumption: 2.1W@24VDC

Full load consumption: 2.6W@24VDC

➤ IES615-2F-2D (RS-232):

Unload consumption: 2.5W@24VDC

Full load consumption: 3.0W@24VDC

➤ IES615-2F-2DI (RS-485):

Unload consumption: 3.0W@24VDC

Full load consumption: 3.5W@24VDC

Working environment

Working temperature: -40~75℃

Storage temperature: -40~85℃

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

Mechanical Structure

Shell: IP30 protect grade, metal shell

Installation: DIN-Rail mounting

Weight: 900g

Size (W×H×D): 53mm×105mm×136mm

Industry Standard

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 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

Certification

CE, FCC, RoHS, UL508 (Pending)

Warranty: 5 years