# IS-DG500P series

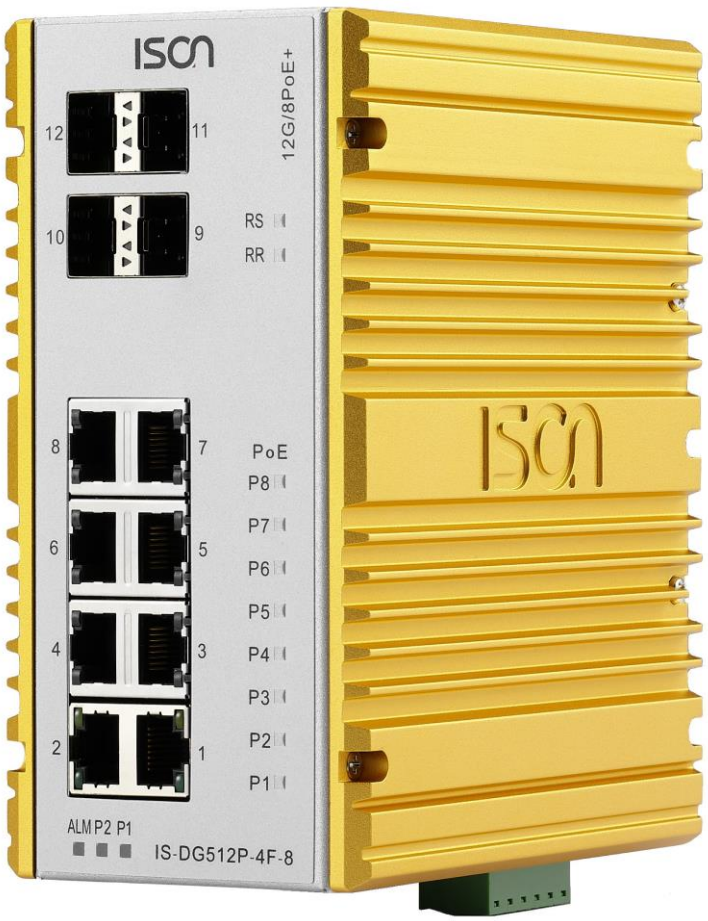
## 8~12-Port Managed Industrial Ethernet PoE Switch

# Quick Installation Guide (H/W)

# Overview

IS-DG500P series industrial Ethernet solutions deliver high quality, wide operation temperature range, extended power input range and advanced VLAN & QoS features. It's ideal for harsh environments and mission critical applications.

■Outlook



## Front Panel Introduction

| Front Panel | |
|---|---|
| System Status LED | P1, P2 and Alarm |
| Gigabit Ethernet Copper Ports | RJ45 |
| Gigabit Ethernet SFP ports | SFP Slots |
| POE LED | POE port status |
| RR/RS LED | Device info/status |

## Top Panel Introduction

| Top Panel | |
|---|---|
| Power Input (Dual) | 6P Terminal Block |
| Console (RS232) | RJ45 |
| Reset | Push Button |

## Technical Specifications

| Ethernet | |
|---|---|
| Operating Mode | Store and Forward, L2 wire-speed/non-blocking switching engine |
| MAC addresses | 8K |
| Packet Buffer | 4 Mbits |
| Jumbo frame | 9K |
| RJ45 Copper ports | |
| Speed | 10/100/1000 Mbps |
| MDI/MDIX Auto-crossover | Support straight or cross wired cables |
| Auto-negotiation/Duplex | 10/100/1000 Mbps speed auto-negotiation; Full & Half Duplex |
| Ethernet Port Protection | 1.5KV VRMS 1minute(Hipot), 2KV surge immunity on RJ45 Copper ports |
| PoE | IEEE 802.3af/at (15.4/30 Watt), PoE/PoE+, 60 Watt Ultra high power PoE |
| Fiber Ports | |
| Port Types supported | 100/1000 Base SFP Slot |
| Filter port connector | LC/RJ45 connector for fiber ports |
| Optimal fiber cable | Typical 50 or 62.5/125 μm for multimode (mm)<br>Typical 8 or 9/125 μm for single mode (sm) |
| Network Redundancy | |
| I.A.Ring / I.A. Chain | Link Loss Recovery < 20ms@250pcs |
| Network Topology Optimize Functions | Ring Coupling, Multiple-Ring, Dual-Homing |
| Spanning Tree Protocol | IEEE 802.1D/1w/1s, STP/RSTP/MSTP |
| Port Trunk / LACP | Static Trunk or LACP (Link Aggregation Control Protocol) |
| Bridge, VLANs, Protocols | |
| Flow Control | IEEE 802.3x (Full Duplex) and Back-Pressure (Half Duplex) |
| Max VLANs | 256 |
| VLAN Types | Port-Based VLAN, Private VLAN, MAC-Based VLAN |
| | IEEE 802.1Q tag-based VLAN, IP Subnet-Based VLAN, Voice VLAN |
| | IEEE 802.1ad Double Tagging (QinQ), Protocol-Based VLAN, VCL |
| Multicast protocols | IGMP v1, v2, V3, up to 255 multicast groups |
| | IGMP snooping, querying, MLD Snooping, GVRP |
| | Immediate leave and leave proxy, Throttling and filtering |
| LLDP | IEEE 802.1ab LLDP / LLDP-MED |

| | |
|---|---|
| Traffic management & QoS | |
| Priority | IEEE 802.1p QoS, Ingress / Egress, QCL |
| Number of queues per port | 8 |
| Scheduling schemes | SPQ, WRR, SPQ+WRR |
| Traffic Shaper | Port-based shaping |
| Security | |
| Port Security | IP and MAC-based Access Control/Filter, Auth User / Privilege Level Control |
| | IEEE 802.1X Authentication Network Access Control / RADIUS / TACACS+ Server |
| Storm Control | Multicast / Broadcast / Flooding Storm Control / Port Access Control / Limiters |
| Management | |
| User Management Interfaces | Cisco-Like CLI (Command Line Interface) |
| | Web-based Management, Windows Utility for quick startup |
| | SNMP V1, V2c, V3 USM, RMON, Trap / Inform / Retry, Telnet (5 sessions) |
| Management Security | HTTPs, SSH, Access Management, Loop Protection |
| | RADIUS Client for Management |
| Upgrade & Restore | TFTP for Configuration Import / Export |
| | TFTP for Firmware Upgrade |
| Diagnostic | Syslog, Level Info / Warning / Error, Detailed Syslog |
| | Port Mirror, Per VLAN mirroring, CPU Load Monitor, Traffic Counter |
| | VeriPHY Ethernet Cable Diagnostics, ICMP Ping |
| PoE | Smart PoE management |
| MIBs | RFC 1757RMON 1, 2, 3, 9; RFC 2674 Q-Bridge MIB |
| | RFC 1213 MIB II; RFC 1493 Bridge MIB; RFC 2233 IF MIB |
| DHCP | Client Mode, Server Mode, Relay Mode, Snooping, Option 82 |
| NTP/SNTP | YES |
| System Status | Device info/status; Ethernet port status |
| Green Ethernet | Port Power Savings |
| Layer 4 Security | Access Control List |
| Power | |
| Power Input | Redundant Power Input, Removable Terminal Block |
| Input Voltage Range | 46-57 VDC |
| Reverse power protection | YES |
| Transient protection | > 15, 000 Watts peak |
| Power Consumption | 17 Watt (Without PD Load),<br>PSE: 8 x 30Watt, total power budget, 240 Watt |
| Indicators | |
| Power status indication | Power Input status |
| Ethernet port indication | Link & speed |
| Environmental and Compliances | |
| Operating Temperature | -40~75ºC (Cold startup at -40ºC) |
| Storage Temperature | -40~85ºC |
| Humidity | 5~95% (Non-Condensing) |
| Vibration, shock, free fall | IEC-60068-6, -27, -32 |
| Certification Compliance | CE, FCC |
| Electrical safety | CE |
| EMC | FCC Part 15, CISPR 22 (EN55022) Class A<br>IEC-61000-4-2, -3, -4, -5, -6 (Level 3) |
| RoHS & WEEE | RoHS (Pb free) and WEEE Compliant |
| MTBF | >25 years |
| Mechanical | |
| Protection | IP30 |
| Dimension | 154mm x 105mm x 108mm(LxWxD) |
| Weight | 1.5 kg |
| Installation | Din-Rail Mount, Wall mount |
| Relay Output | 1A, 24V, Normal Open |

System statistics

| Function Name | System Max Value |
|---|---|
| VLAN ID | 4096 |
| VLAN Limitation | 1024 |

| | |
|---|---|
| Privilege Level of User | 15 |
| RMON Statistic Entry | 65535 |
| RMON Alarm Entry | 65 |
| RMON Event Entry | 65535 |
| IPMC Profile | 64 |
| IPMC Rule / Address Entry | 128 |
| ACE | 256 |
| ICMP Type / Code | 255 |
| RADIUS Server | 5 |
| TACACS+ Server | 5 |
| MAC-based VLAN Entry | 256 |
| IP subnet-based VLAN Entry | 128 |
| Protocol-based VLAN Group | 125 |
| Voice VLAN OUI | 16 |
| QCE | 256 |
| IP Interface | 8 |
| IP Route | 32 |
| Security Access Management | 16 |
| MVR VLAN | 4 |
| MAC Learning table address | 8k |
| IGMP Group | 256 |

# *Quick Installation*

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***Equipment Mounting***

***Cable Connecting***

***Equipment Configuration***

# Quick Installation

## Mounting the IS-DG500P (DIN-Rail)

Mounting step:

1. Screw the DIN-Rail bracket on with the bracket and screws in the accessory kit.
2. Hook the unit over the DIN rail.
3. Push the bottom of the unit towards the DIN Rail until it snaps into place.

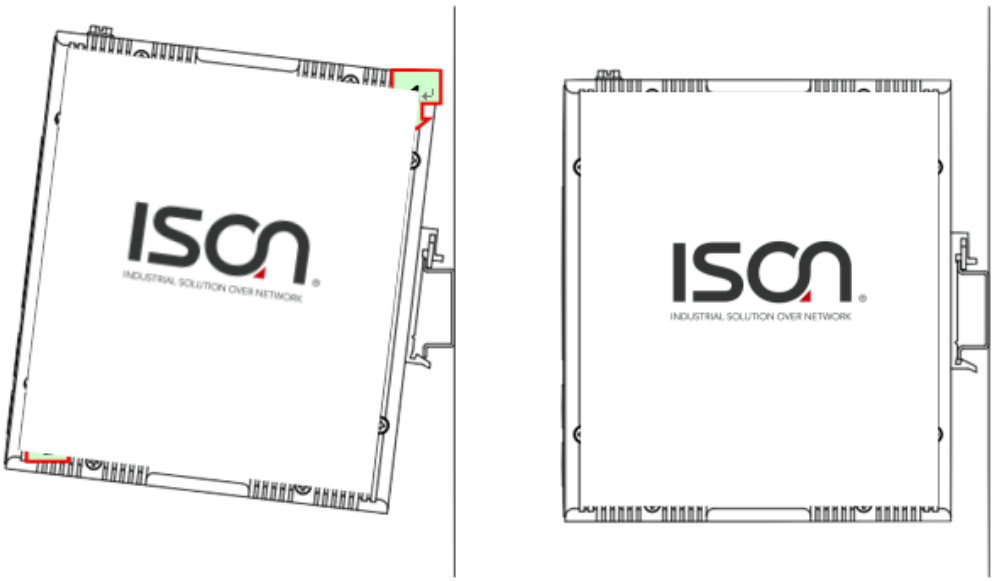
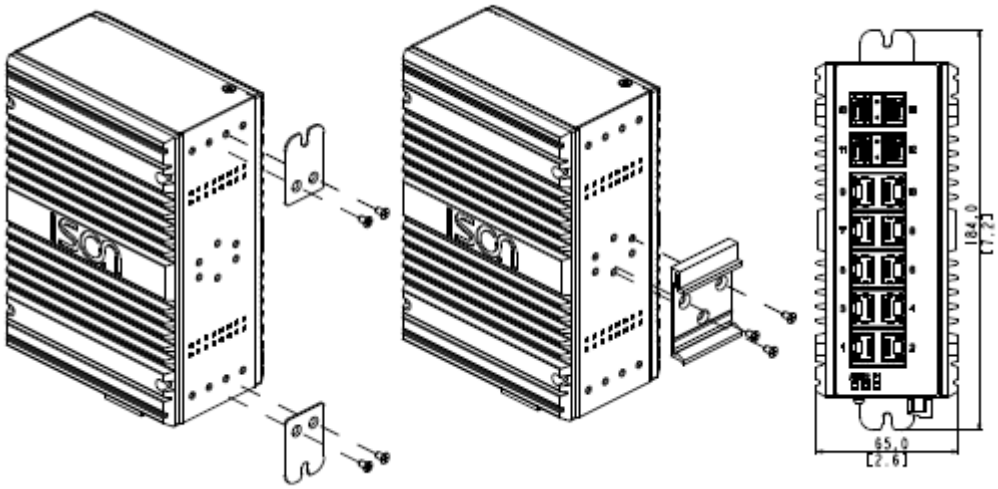


Figure 1 IS-DG500P DIN-Rail Mounting

## Mounting the IS-DG500P (Wall mount)

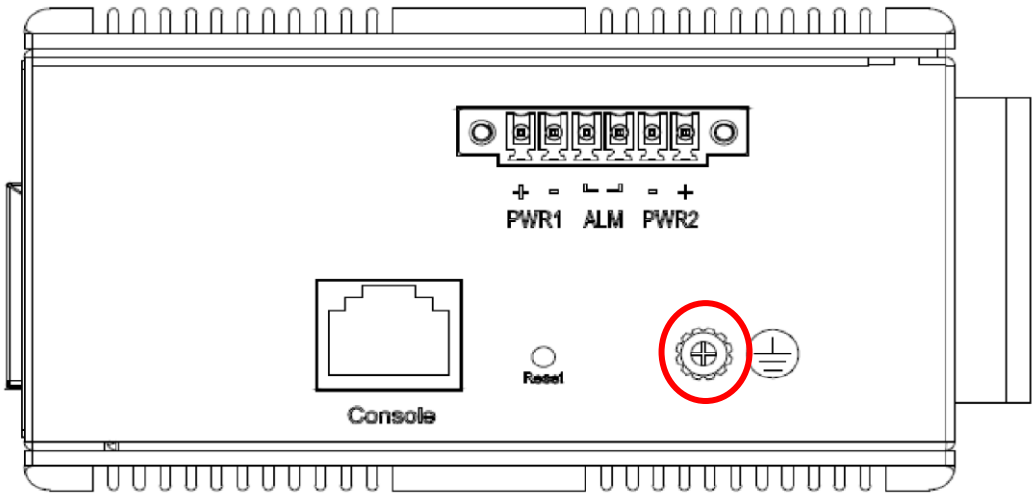
Mounting step:

1. Screw on the wall-mounting plate on with the plate and screws in the accessory kit.



## Ground Connections

IS-DG500P must be properly grounded for optimum system performance.



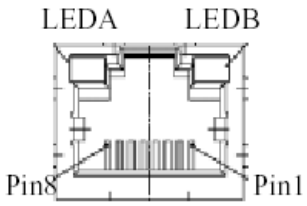
# Connecting the Ethernet Interface (RJ45 Ethernet)

IS-DG500P provides two types of electrical (RJ45) and optical (mini-GBIC) interfaces. For example, on IS5010-8T(GT)-2SFP, Port 1-8 are electrical only (RJ45).

- To connect to a PC, use a straight-through or a cross-over Ethernet cable,
- To connect the IS-DG500P copper Port to an Ethernet device, use UTP (Unshielded Twisted Pair) or STP (Shielded Twisted Pair) Ethernet cables.

The pin assignment of RJ-45 connector is shown in the following figure and table.

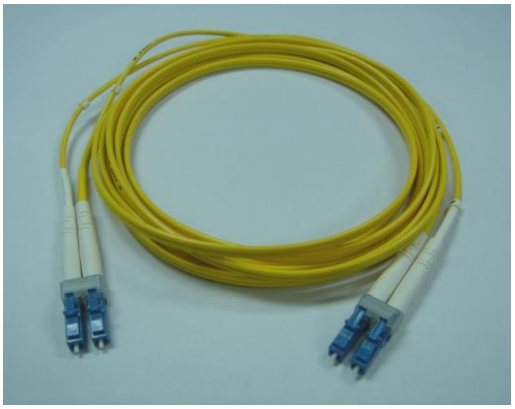
| Pin | Assignment | PoE Assignment |
|---|---|---|
| 1,2 | T/Rx+,T/Rx- | Positive $V_{Port}$ |
| 3,6 | T/Rx+,T/Rx- | Negative $V_{Port}$ |
| 4,5 | T/Rx+,T/Rx- | X |
| 7,8 | T/Rx+,T/Rx- | X |




# Connecting the Ethernet Interface (Fiber)

Prepare a proper SFP module and install it into the optical port. Then you can connect fiber optics cabling that uses LC connectors or SC connectors (with the use of an optional SC-to-LC adapter) to the fiber optics connector.

Refer to **錯誤! 找不到參照來源。** for the normal operational LED status.



Fiber optics cable with LC duplex connector


Connect the optical fiber to the SFP socket

**DANGER:** Never attempt to view optical connectors that might be emitting laser energy.

Do not power up the laser product without connecting the laser to the optical fiber and putting the cover in position, as laser outputs will emit infrared laser light at this point.

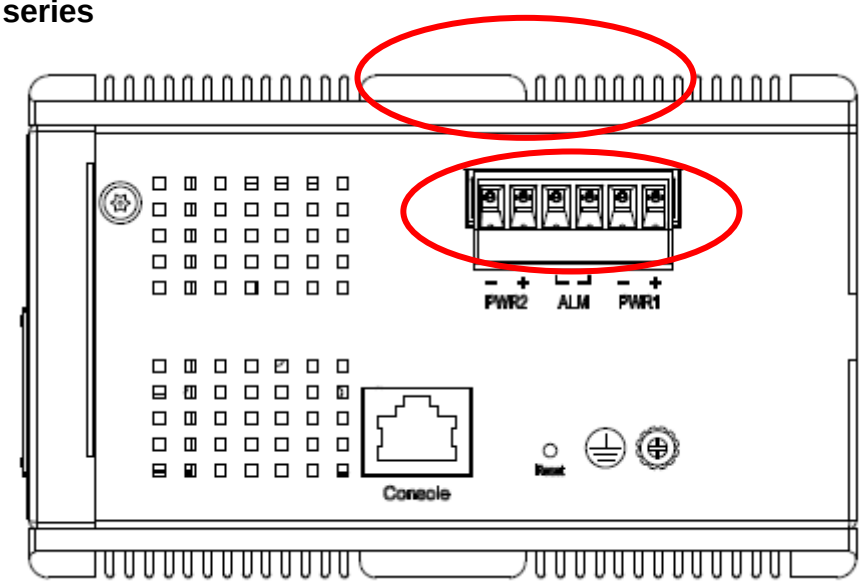
Power Connection

The DC power interface is a 6-pin terminal block with polarity signs on the top panel.

The IS-DG500P can be powered from two power supply (input range 12V – 58V). The DC power connector is a 6-pin terminal block; There is alarm contact on the middle terminal block.

Refer to **錯誤! 找不到參照來源。** for the normal operational LED status.

**IS-DG500P series**



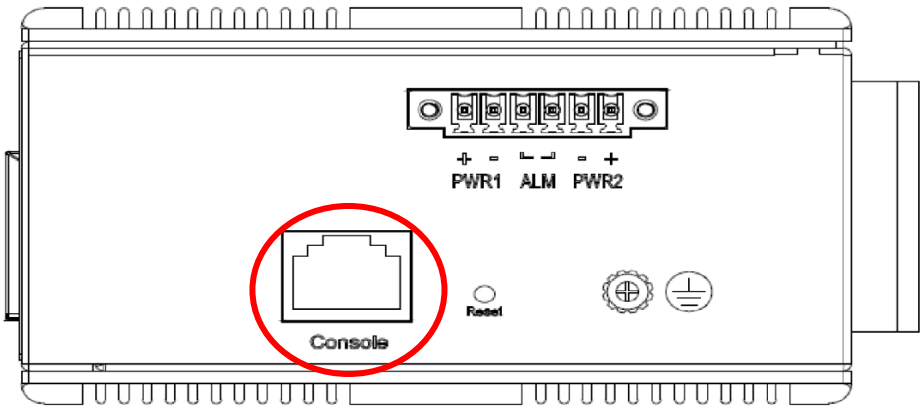

| Power Connector (6P Terminal Block) | |
|---|---|
| **Input** | DC 12-58V |
| **PWR1 +/-** | Power Input 1 +/- |
| **PWR2 +/-** | Power Input 2 +/- |
| **ALM** | Alarm relay output |

**Note:** 1. The DC power should be connected to a well-fused power supply.

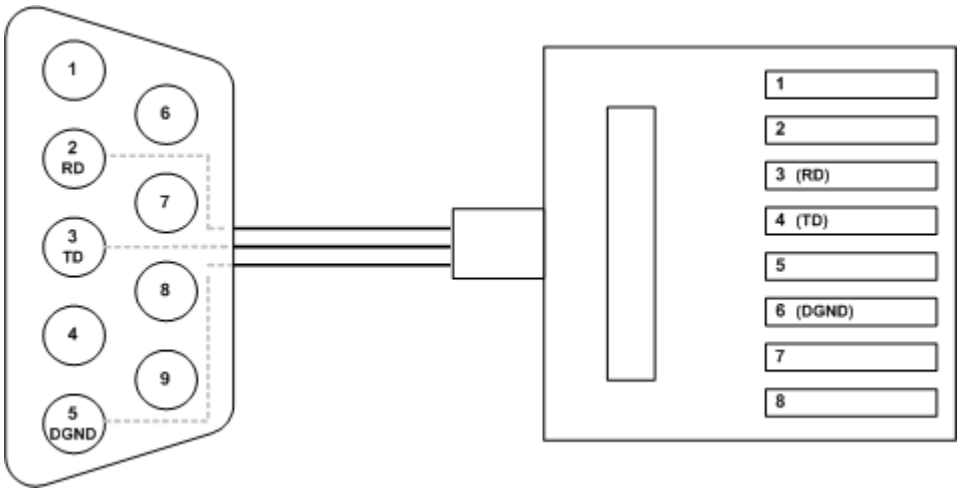
# Console Connection

The Console port is for local management by using a terminal emulator or a computer with terminal emulation software.

- DB9 connector connect to computer COM port
- Baud rate: 115200bps
- 8 data bits, 1 stop bit
- None Priority
- None flow control

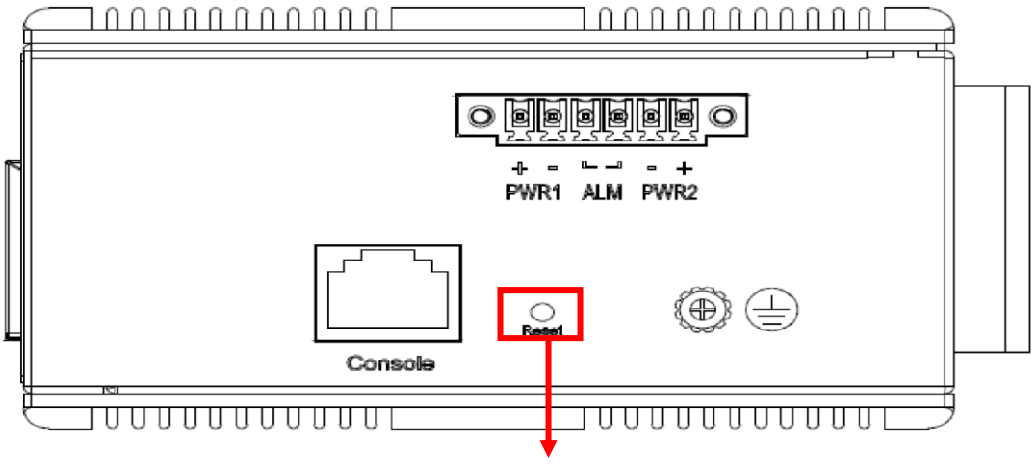


To connect the host PC to the Console port, a RJ45 (male) connector-to-RS232 DB9 (female) connector cable is required. The RJ45 connector of the cable is connected to the Console port of IS-DG500P; the DB9 connector of the cable is connected to the PC COM port. The pin assignment of the Console cable is shown below:




## SYSTEM RESET

The Reboot button is provided to reboot the system without the need to remove power. Under normal circumstances, you will not have to use it. However, or rare occasions, the IS-DG500P may not respond; then you may need to push the Reboot button.




**Reboot Button**