

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 μ m for multimode (mm) Typical 8 or 9/125 μ m 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), 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	-40~75°C (Cold startup at -40°C)
Storage Temperature	-40~85°C
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 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

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.

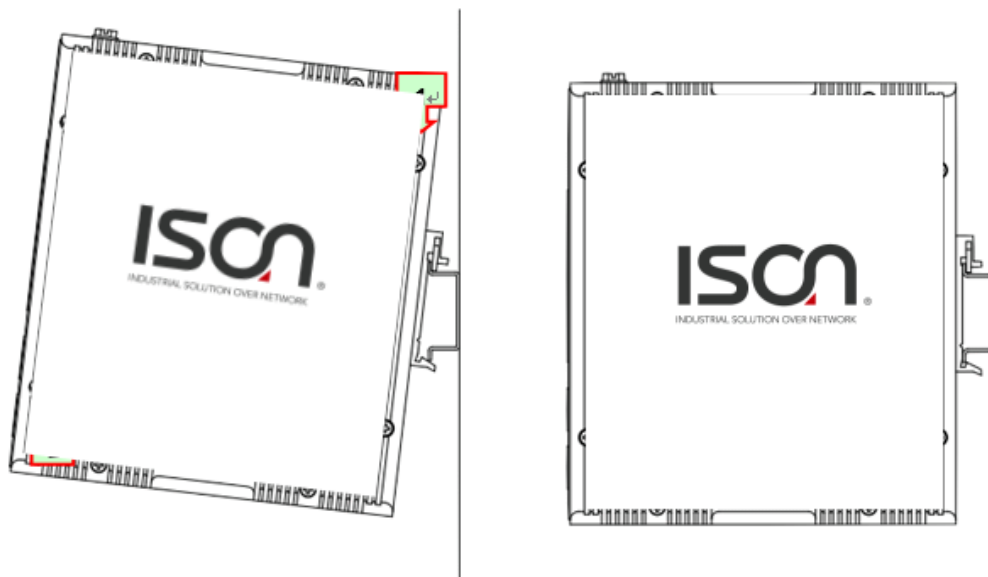
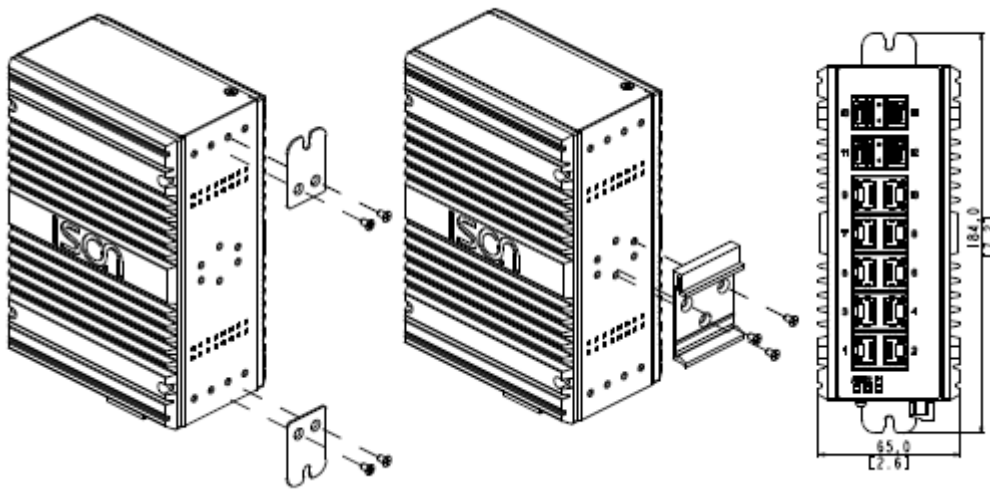


Figure 1 IS-DG500P DIN-Rail Mounting

Mounting the IS-DG500P (Wall mount)

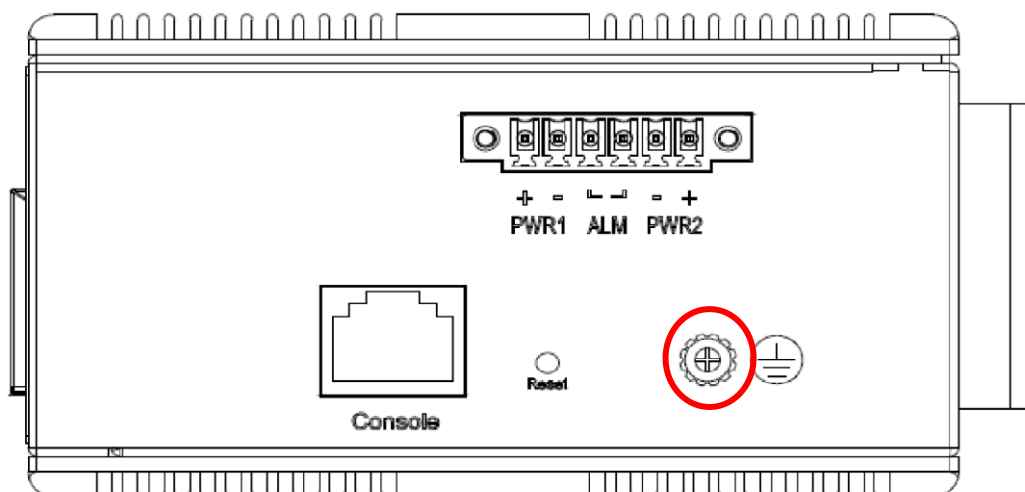
Mounting step:

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.



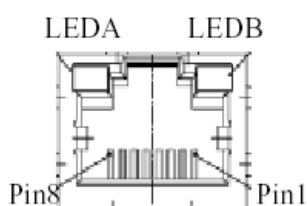
Connecting the Ethernet Interface (RJ45 Ethernet)

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.

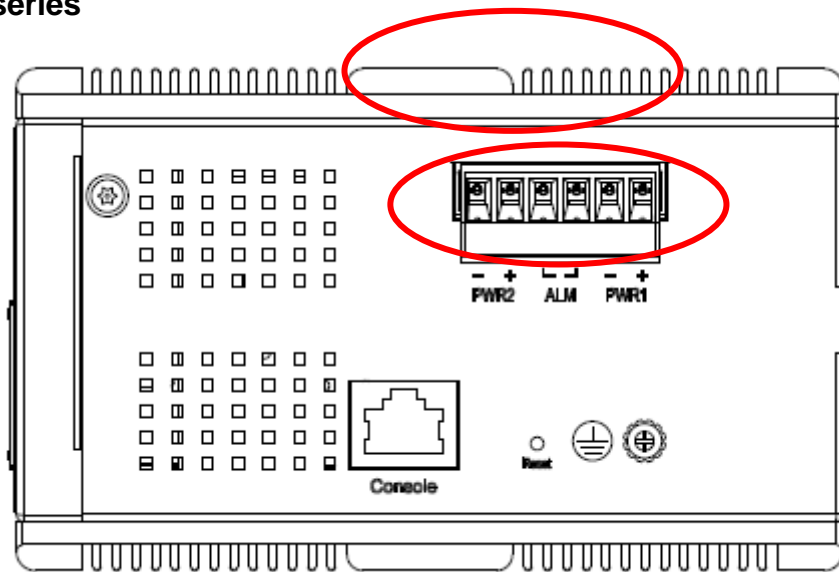
Power Connection

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)

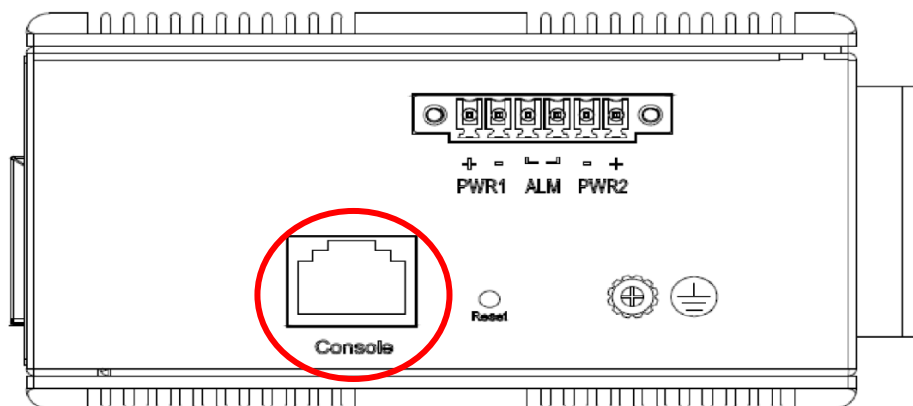
Input	DC 12-58V
PWR1 +/-	Power Input 1 +/-
PWR2 +/-	Power Input 2 +/-
ALM	Alarm relay output

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

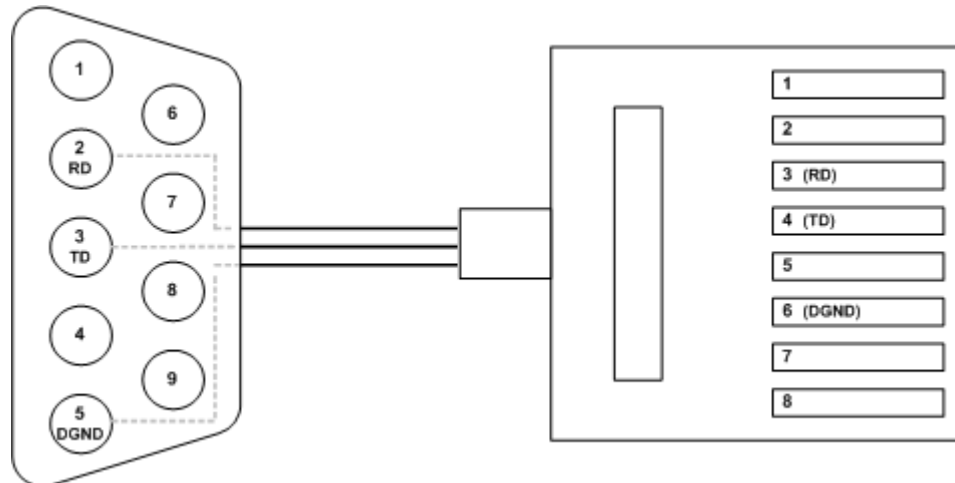
Console Connection

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

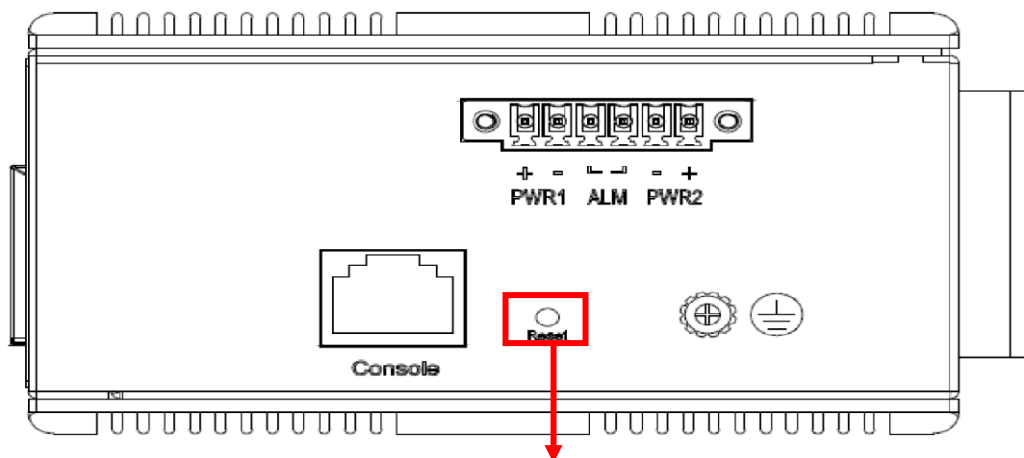


To connect the host PC to the Console port, a RJ45 (male) connector-to-RS232 DB9 (female) connector cable is required. The RJ45 connector of the cable is connected to the Console port of IS-DG500P; the DB9 connector of the cable is connected to the PC COM port. The pin assignment of the Console cable 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, on rare occasions, the IS-DG500P may not respond; then you may need to push the Reboot button.



Reboot Button