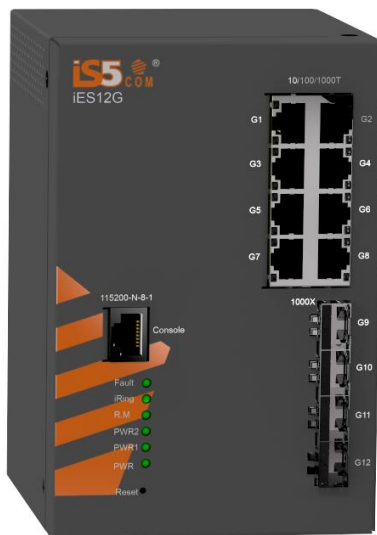


# iES12G

## Intelligent 12 Port Managed Gigabit Ethernet Switch

### Product Overview



The iES12G is an intelligent managed 12 port Gigabit Ethernet switch with 8 Gigabit RJ45 ports and up to 4 Gigabit SFP ports.

The iES12G provides redundancy support through functions such as STP/RSTP/MSTP assuring protection of all mission critical network applications. iES12G can be managed via the Web, iManage Software Suite, Telnet, and Console (CLI).

The switch is made of IP-40 galvanized steel and has a wide operating temperature range from -40°C to +85°C, which is suitable for the harshest of environments without the use of fans.



Tel: +1 905-670-0004  
Toll Free : +1 844-520-0588  
Technical Support: +1 844-475-8324  
Email: [info@is5com.com](mailto:info@is5com.com)  
[www.is5com.com](http://www.is5com.com)





# Features

Table 1. Features

Feature	
<b>Supports:</b>	<ul style="list-style-type: none"><li>• STP / RSTP / MSTP</li><li>• LLDP (Link Layer Discovery Protocol) and Modbus TCP</li><li>• VLAN Priority—supports priority-tagged frames to be received by specific IEDs</li><li>• HTTPS and SSH</li><li>• SNTP for synchronizing the switch’s clocks</li><li>• PTP clock synchronization</li></ul>
IGMP v2 / v3 (IGMP Snooping)	
SNMP v1 / v2c /v3 & RMON	
ACL, RADIUS, and NAS 802.1x (User Authentication)	
9.6K Bytes Jumbo Frame	
Multiple alarm notification methods	
Configurable by Web browser, Telnet, Console(CLI), iManage software running on Windows 10, NT/2000/XP/2003/VISTA/7	
DIN rail and panel mount	



## Product Specifications

**Table 2. Technical Specification**

Description	Specification
<b>8 X 10/100/1000Base-T(X) RJ45 Auto MDI/MDIX</b>	8
<b>4 X 100/1000Base-X SFP</b>	4
<b>RS-232 Serial Console Port</b>	RS-232 in RJ45 connector with console cable: 115200 bps, 8, N, 1
<b>Warning / Monitoring System</b>	Relay output for fault event alarming 2 alarm warning methods for system events supported: <ul style="list-style-type: none"> <li>• SYSLOG with server / client structure; recording and viewing events in the System Event Log</li> <li>• SMTP for notification via email</li> </ul> Event selection per port
<b>Alarm</b>	Relay output to carry capacity of 1 A at 24 VDC
<b>Technology</b>	
<b>MAC Table</b>	8K
<b>Priority Queues</b>	8
<b>Processing</b>	Store-and-Forward
<b>Switch Properties</b>	Switching latency: 7 $\mu$ s Switching bandwidth: 24 Gbps Max. Number of Available VLANs: 4096 IGMP multicast groups: 32 per each VLAN Port rate limiting: User Defined
<b>Jumbo frame</b>	9.6K
<b>Security Features</b>	<ul style="list-style-type: none"> <li>• STP/RSTP/MSTP</li> <li>• Device Binding and Remote Control Security</li> <li>• Access Control List (ACL) for every port</li> <li>• Authentication, Authorization and Accounting (AAA)</li> <li>• RADIUS Authentication management</li> <li>• Port based network access control (NAS) 802.1x</li> <li>• QoS for achieving efficient bandwidth utilization</li> <li>• Private VLAN with Port Isolation Configuration</li> <li>• VLAN (802.1 Q) for segregation and securing network traffic</li> <li>• SNMPv3 authentication and privacy encryption</li> <li>• HTTPS / SSH enhanced network security</li> <li>• Web and CLI authentication and authorization</li> </ul>



Description	Specification
<b>Software Features</b>	<ul style="list-style-type: none"> <li>• Web or CLI based Management (Console or Telnet / SSH)</li> <li>• Redundancy— STP/RSTP/MSTP and Fast Recovery</li> <li>• DHCP Server / Relay</li> <li>• VLAN (802.1Q) for segregating and securing network traffic</li> <li>• Supports SNMPv1/v2/v3</li> <li>• Traffic Prioritization—Storm Control and Quality of Service (QoS) including DSCP-Based QoS Ingress Port Classification</li> <li>• Multicast traffic—IGMP Snooping (IGMP v1/v2 / v3) and unregistered IPMCv4 Flooding</li> <li>• Warnings (Syslog and SMTP) and Fault Alarm (power failure)</li> <li>• Monitoring and Diagnostics—MAC Table and Port Statistics (ports monitoring including for SFP ports, system information, issuing PING packets for troubleshooting IP connectivity issues)</li> <li>• SNTP for synchronizing of clocks over network</li> <li>• Supports PTP Client (Precision Time Protocol) clock synchronization</li> </ul>
<b>Network Redundancy</b>	<ul style="list-style-type: none"> <li>• RSTP (IEEE 802.1 D/w)</li> <li>• MSTP (RSTP/ STP compatible)</li> <li>• Fast Recovery and Dual Port Recovery</li> </ul>
Physical Characteristics	
<b>Enclosure</b>	IP-40 Galvanized Steel
<b>Dimensions (W x D x H)</b>	101.6 (W) x 121.0 (D) x 176.7 (H) mm (4.00 x 4.77 x 6.96 inches) DIN rail mount 114.3 (W) x 128.5(D) x 203.2 (H) mm (4.50 x 5.06 x 8.00 inches) panel mount 1 101.6 (W) x 121.0 (D) x 203.2 (H) mm (4.52 x 4.94 x 8.00 inches) panel mount 2
<b>Weight (g)</b>	~1800 g
Power	
<b>Input Power</b>	Redundant Power Supplies: Dual Input 10-48VDC, Single Input 36-75VDC with Single 10-48VDC Backup, or Single Input 110-370VDC or 90-264VAC with Single 10-48VDC Backup
<b>Power Consumption (Typ.)</b>	22 Watts
<b>Overload Current Protection</b>	Present
<b>Reverse Polarity Protection</b>	Internal



**Table 3. Compliance Specifications**

Type	Standards
<b>Electromagnetic Emissions</b>	FCC Part 15, CISPR (EN55022) class A, EN 50155 (EN 50121-3-2, EN 55011, EN 50121-4)
<b>Electromagnetic Immunity</b>	EN 61000-4-2 (ESD), EN 61000-4-3 (RS), EN 61000-4-4 (EFT), EN 61000-4-5 (Surge), EN 61000-4-6 (CS), EN 61000-4-8, EN 61000-4-11
<b>Safety Standards</b>	EN 60950-1
<b>Operating Environment</b>	-40°C to +85°C (-40° to 185°F) (no fans) EN 60068-2-21
<b>Storage Environment</b>	-40°C to +85°C (-40° to 185°F) EN 60068-2-14
<b>Operating Humidity</b>	5% to 95% Non-condensing EN 60068-2-30
<b>Shock</b>	IEC 60068-2-27
<b>Free Fall</b>	IEC 60068-2-32
<b>Vibration</b>	IEC 60068-2-32
<b>Warranty</b>	5 years

**Table 4. Standards and Management**

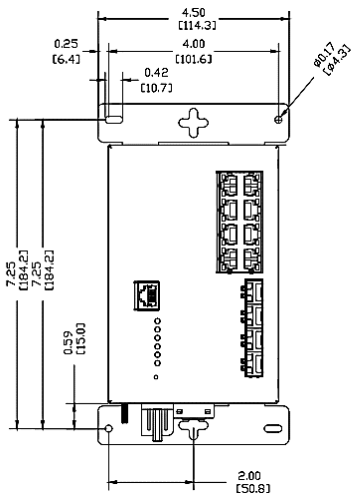
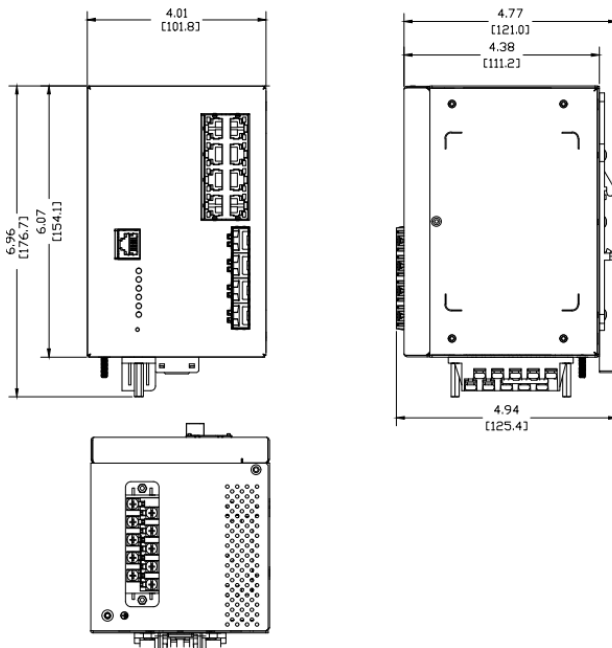
Description	Specification			
<b>IEEE Standards</b>	IEEE 802.3 for 10Base-T IEEE 802.3u for 100Base-TX and 100Base-FX IEEE 802.3ab for 1000Base-T IEEE 802.z for 1000Base-X IEEE 802.3x for Flow control IEEE 802.3ad for LACP (Link Aggregation Control Protocol) IEEE 802.1D - 1998 Spanning Tree Protocol (STP) IEEE 802.1D – 2004 /w Rapid Spanning Tree Protocol (RSTP) IEEE 802.1Q – 2014 Bridged Networks IEEE 802.1-2010 Port Based Network Access Control IEEE 802.1AB – 2016 Station and Media Access Connectivity discovery (LLDP) IEEE 802.1AX Link Aggregation			
<b>RFC Compliance</b>	<table border="0"> <tr> <td style="vertical-align: top;"> <ul style="list-style-type: none"> <li>• RFC 768: UDP</li> <li>• RFC 783: TFTP</li> <li>• RFC 791: IPv4</li> <li>• RFC 792: ICMP</li> <li>• RFC 793: TCP</li> <li>• RFC 854: Telnet</li> <li>• RFC 959: FTP</li> <li>• RFC 1157: SNMPv1</li> </ul> </td> <td style="vertical-align: top;"> <ul style="list-style-type: none"> <li>• RFC 1901,1902-1907 SNMPv2</li> <li>• RFC 2273-2275: SNMPv3</li> <li>• RFC 2571: SNMP Management</li> <li>• RFC 1166: IP Addresses</li> <li>• RFC 1643: Ethernet Interface MIB</li> <li>• RFC 1757: RMON</li> <li>• RFC 2068: HTTP</li> <li>• RFC 2990 QoS</li> </ul> </td> <td style="vertical-align: top;"> <ul style="list-style-type: none"> <li>• RFC 2131, 2132: DHCP</li> <li>• RFC 2236: IGMP v2</li> <li>• RFC 3376: IGMP v3</li> <li>• RFC 2474: DiffServ Precedence</li> <li>• RFC 3046: DHCP Relay Agent Information Option</li> <li>• RFC 3580: 802.1x RADIUS</li> <li>• RFC 4250-4252 SSH Protocol</li> </ul> </td> </tr> </table>	<ul style="list-style-type: none"> <li>• RFC 768: UDP</li> <li>• RFC 783: TFTP</li> <li>• RFC 791: IPv4</li> <li>• RFC 792: ICMP</li> <li>• RFC 793: TCP</li> <li>• RFC 854: Telnet</li> <li>• RFC 959: FTP</li> <li>• RFC 1157: SNMPv1</li> </ul>	<ul style="list-style-type: none"> <li>• RFC 1901,1902-1907 SNMPv2</li> <li>• RFC 2273-2275: SNMPv3</li> <li>• RFC 2571: SNMP Management</li> <li>• RFC 1166: IP Addresses</li> <li>• RFC 1643: Ethernet Interface MIB</li> <li>• RFC 1757: RMON</li> <li>• RFC 2068: HTTP</li> <li>• RFC 2990 QoS</li> </ul>	<ul style="list-style-type: none"> <li>• RFC 2131, 2132: DHCP</li> <li>• RFC 2236: IGMP v2</li> <li>• RFC 3376: IGMP v3</li> <li>• RFC 2474: DiffServ Precedence</li> <li>• RFC 3046: DHCP Relay Agent Information Option</li> <li>• RFC 3580: 802.1x RADIUS</li> <li>• RFC 4250-4252 SSH Protocol</li> </ul>
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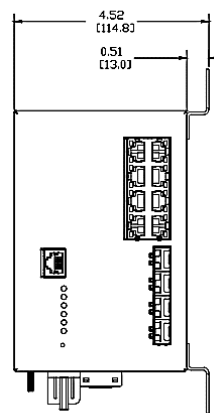
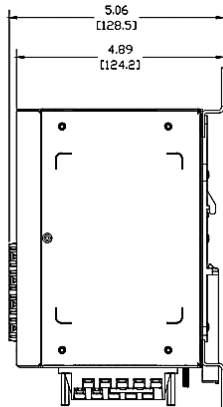
# Dimensions

All dimensions are shown in inches.

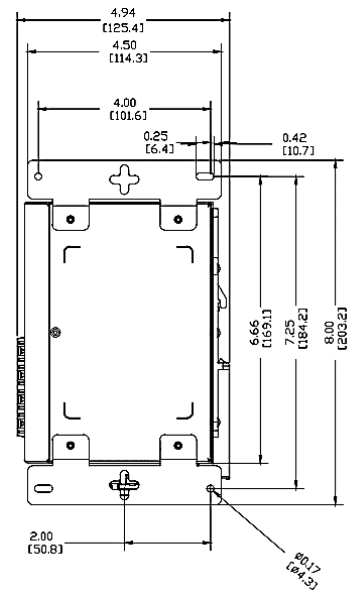
## Dinrail mount



**Panel mount  
Bracket installed at Rear**



**Panel mount  
Bracket installed at Side**





# Ordering Information

Base	Power Supply	Mount	Ethernet Port 9-16	Ethernet Port 9-12*	Conformal Coating	Description
iES12G	HV	D	8GRJ45	4GSFP	C1	
iES12G						Core assembly and packaging
	LV					Dual Input 10-48VDC
	MV					Single Input 36-75VDCwith Single 10-48VDC Backup
	HV					Single Input 110-370VDC or 90-264VAC with Single 10-48VDC Backup
		D				DIN Rail Mounting
		P				Panel Mounting
		N				No Mounting Hardware
			8GRJ45			8 X 10/100/1000Base-T(X) RJ45
				XX		None
				4GSFP		4 X 100/1000Base-X SFP
					C1	Conformal Coating

\*Ports 9-12 default port type is 1 Gigabit.

**Example Order Code**    iES12G-HV-D-8GRJ45-4GSFP-C1  
**Description:**

**12 Port Ethernet Switch with a combination of Gig ports, (Power Supply) Single Input 110-370VDC or 90-264VAC with Single 10-48VDC Backup, (Mount) DIN Rail Mounting, (Ethernet Port 1-8)—8 X 10/100/1000Base-T(X) RJ45, (Ethernet Port 9-12) - 4 X 100/1000Base-X SFP, C1 - added for conformal coating**