

iES8G

Intelligent 8 Port Managed Gigabit Ethernet Switch



Product Overview

The iES8G is an intelligent 8 Port managed Gigabit Ethernet switch with up to 8 x 10/100/1000Base-T(X) RJ45 Auto MDI/MDIX, up to 6 x 10/100Base-T(X) RJ45 Auto MDI/MDIX, up to 4 x 100/1000Base-X SFP, and up to 4 Combo 10/100/1000Base-T(X) RJ45 and 100/1000Base-X.

The iES8G provides redundancy support through functions such as STP/RSTP/MSTP assuring protection of all mission critical network applications. iES8G can be managed via the Web UI, iManage Software Suite, Telnet, and Console (CLI)/SSH v2.

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.

Features and Benefits

Table 1. Features

FEATURE	
SUPPORTS	<ul style="list-style-type: none"> • STP / RSTP / MSTP • LLDP (Link Layer Discovery Protocol) • Modbus TCP • VLAN Priority—supports priority-tagged frames to be received by specific IEDs • HTTPS / SSH v2 • SNTP for synchronizing the switch's clock • MRP - Media Redundancy Protocol*
IGMP V2 / V3 (IGMP SNOOPING)	
SNMP V1 / V2C / V3	
RADIUS FOR 802.1X AUTHENTICATION TACACS+ FOR USER LOGIN AUTHENTICATION	
SUPPORTS DDM (DIGITAL DIAGNOSTIC MONITORING) FUNCTION FOR SFP MODULES	
MULTIPLE ALARM NOTIFICATION METHODS	
CONFIGURABLE BY WEB UI, TELNET, CONSOLE(CLI), IMANAGE SOFTWARE RUNNING ON WINDOWS 10, NT /2000/ XP/2003/VISTA/7	
DIN RAIL AND PANEL MOUNT	

* MRP implementation is based on IEC 62439 Ed. 1.0

PRODUCT SPECIFICATIONS

Table 2. Technical Specification

DESCRIPTION	SPECIFICATION
10/100/1000BASE-T(X) RJ45 AUTO MDI/MDIX	Up to 8
10/100BASE-T(X) RJ45 AUTO MDI/MDIX	Up to 6
100/1000BASE-X SFP	Up to 4
COMBO 10/100/1000BASE-T(X) RJ45 AND 100/1000BASE-X	Up to 4
RS-232 SERIAL CONSOLE PORT	RS-232 in RJ45 connector with console cable: 9600 bps, 8, N, 1
WARNING / MONITORING SYSTEM	<ul style="list-style-type: none"> • SYSLOG with server / client structure; recording and viewing events in the System Event Log • SMTP for notification via email Event selection per port
ALARM	Relay output to carry capacity of 1 A at 24 VDC
TECHNOLOGY	
MAC TABLE	8K
PRIORITY QUEUES	4
PROCESSING	Store-and-Forward
SWITCH PROPERTIES	Switching latency: 7 μ s Switching bandwidth: 16 Gbps Max. Number of Available VLANs: 4096 IGMP multicast groups: 32 Port rate limiting: User Defined

Product Specifications

TECHNOLOGY

SECURITY FEATURES	<ul style="list-style-type: none">• STP/RSTP/MSTP• RADIUS for 802.1x authentication• TACACS+ for user login authentication• Port based network access control (NAS) 802.1x• VLAN (802.1 Q) for segregation and securing network traffic enabled by GVRP• SNMPv3 authentication and privacy encryption• Management Security• Port security and MAC Blacklist• IP Guard• HTTPS / SSH v2• Web and CLI authentication and authorization
SOFTWARE FEATURES	<ul style="list-style-type: none">• Web or CLI based Management (RS-232 Serial Console or Telnet/SSH v2)• DHCP Server /Client / Relay• VLAN—Port-based (untagged) and 802.1Q (tagged)• Supports SNMPv1/v2/v3• Traffic Prioritization—QoS, Port-based Priority, COS/802.1p, TOS/ DSCP• Multicast traffic—IGMP Snooping (IGMP v2 / v3), MVR, Static Multicast Filtering• Warnings (SYSLOG and SMTP), Fault Alarm (power and ports failure), and Event Selection• Monitoring and Diagnostics—MAC Table and Port Statistics, Counters, and Monitoring, System Event Log, Traffic Monitoring, and Ping• SNTP for synchronizing of clocks over network
NETWORK REDUNDANCY	STP/ RSTP/ MSTP, Fast Recovery, Dual Port Recovery, and Ring

PHYSICAL CHARACTERISTICS

ENCLOSURE	IP-40 Galvanized Steel
DIMENSIONS (W X D X H) FOR 8G	101.6 (W) x 125.2 (D) x 162.4(H) mm (4.0 x 4.93 x 6.39 inches) DIN rail 101.6 (W) x 120.8 (D) x 184.2(H) mm (4.0 x 4.76 x 7.25 inches) Panel mount 1 101.6 (W) x 125.2 (D) x 184.2(H) mm (4.36 x 4.93 x 7.25 inches) Panel mount 2
WEIGHT (G)	~1.6 kg (8G)

POWER

INPUT POWER	Redundant Power Supplies: Dual Input 24VDC(Nom), 10-36VDC (Oper), or Single Input 48VDC(Nom), 36-75VDC (Oper) with Single 24VDC(Nom), 10-36VDC (Oper) Backup, or Single Input 100-240VDC(Nom), 88-300VDC(Oper) or 100-240VAC(Nom), 85-264VAC(Oper) 50/60Hz with Single 24VDC (Nom), 10-36VDC (Oper) Backup
POWER CONSUMPTION (TYP.)	22.8 Watts
OVERLOAD CURRENT PROTECTION	Present
REVERSE POLARITY PROTECTION	Internal

Product Specifications

Table 3. Compliance Specification

TYPE	STANDARDS
ELECTROMAGNETIC EMISSIONS	FCC Part 15, CISPR (EN55022) class A, EN50155 (EN50121-3-2, EN55011, EN50121-4)
ELECTROMAGNETIC IMMUNITY	EN61000-4-2 (ESD), EN61000-4-3 (RS), EN61000-4-4 (EFT), EN61000-4-5 (Surge), EN61000-4-6 (CS), EN61000-4-8, EN61000-4-11
SAFETY STANDARDS	EN60950-1
OPERATING ENVIRONMENT	-40°C to +85°C (-40° to 185°F) (no fans) EN 60068-2-21
STORAGE ENVIRONMENT	-40°C to +85°C (-40° to 185°F) EN 60068-2-14
OPERATING HUMIDITY	5% to 95% Non-condensing EN 60068-2-30
SHOCK	IEC60068-2-27
FREE FALL	IEC60068-2-32
VIBRATION	IEC60068-2-6
WARRANTY	5 years, (extendable option with additional terms)
MTBF	182488 Hours / 20.8 Years (Operating Temperature: 55°C)

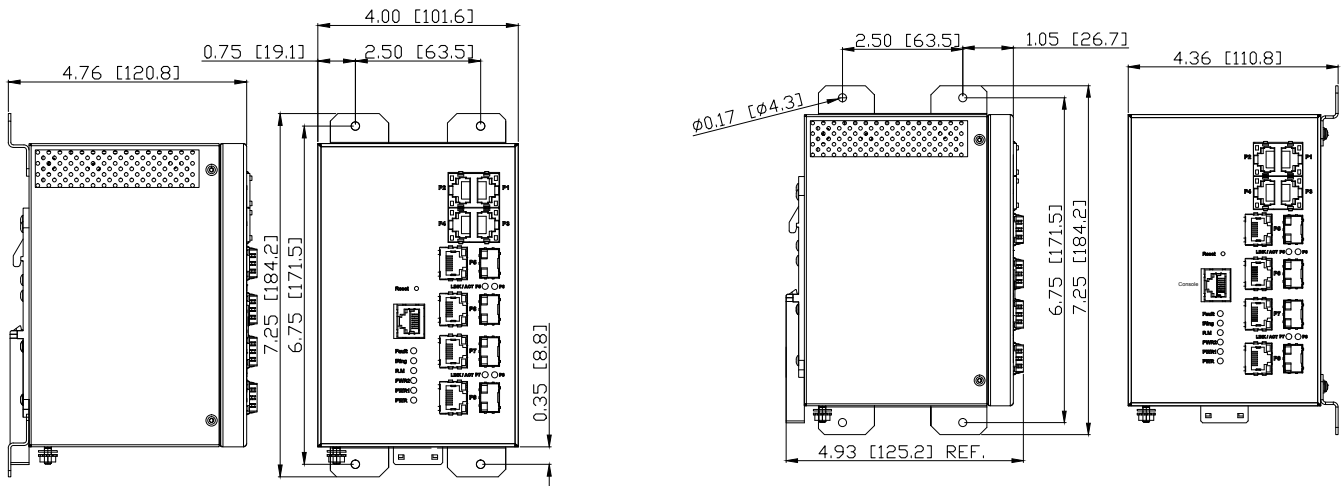
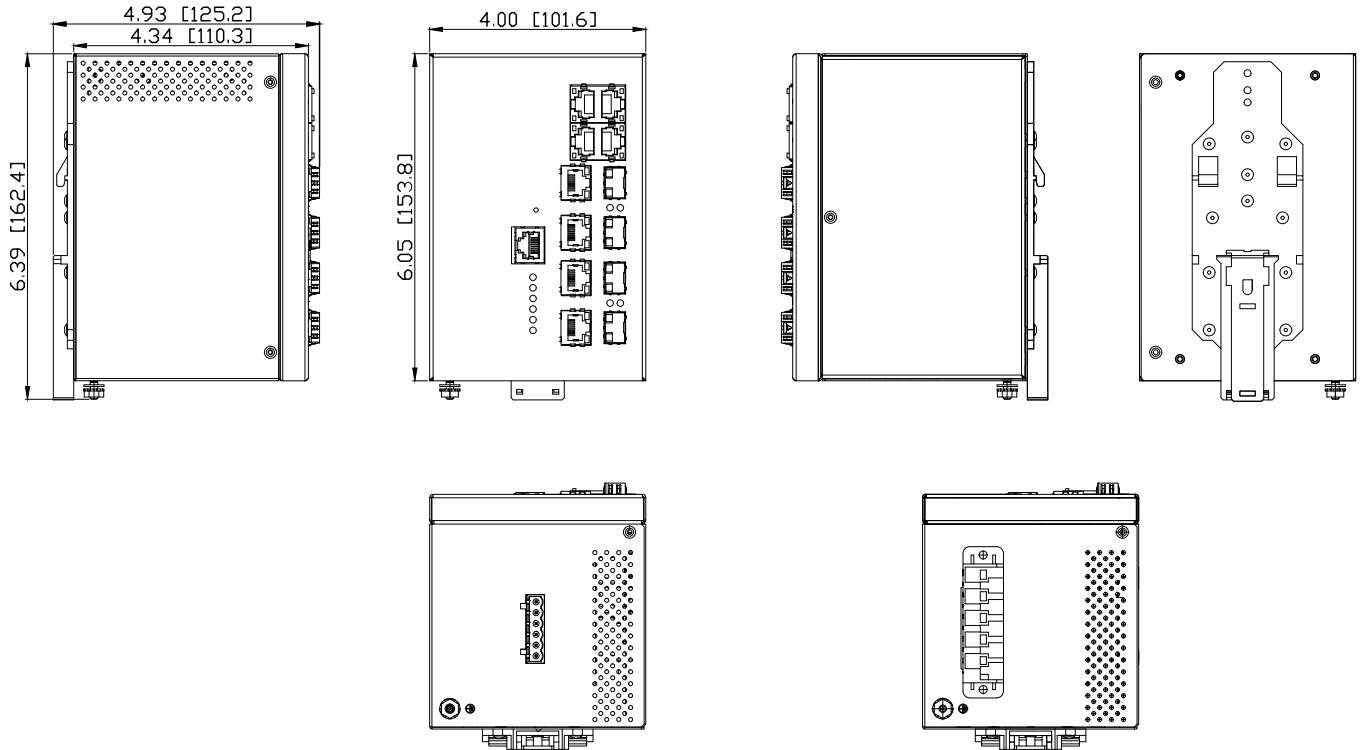
Table 4. Standards and Management

DESCRIPTION	SPECIFICATION
IEEE STANDARDS	<ul style="list-style-type: none"> IEEE 802.3 for 10Base-T IEEE 802.3u for 100Base-TX and 100Base-FX IEEE 802.3ab for 1000Base-T IEEE 802.3z for 1000Base-X IEEE 802.3x for Flow control IEEE 802.1D Spanning Tree Protocol IEEE 802.1w -2001 Rapid Spanning Tree Protocol (RSTP) IEEE 802.1D-2004 Rapid Spanning Tree Protocol (RSTP:2004) IEEE 802.1X-2010 Port Based Network Access Control IEEE 802.1AB – 2016 Station and Media Access Connectivity discovery (LLDP)
RFC COMPLIANCE	<ul style="list-style-type: none"> <li style="width: 33%;">• RFC 768: UDP <li style="width: 33%;">• RFC 2273-2275: SNMPv3 <li style="width: 33%;">• RFC 2818 HTTP Over TLS <li style="width: 33%;">• RFC 783: TFTP <li style="width: 33%;">• RFC 2571: SNMP Management <li style="width: 33%;">• RFC 3376: IGMP v3 <li style="width: 33%;">• RFC 791: IPv4 <li style="width: 33%;">• RFC 1166: IP Addresses <li style="width: 33%;">• RFC 2474: DiffServ Precedence <li style="width: 33%;">• RFC 792: ICMP <li style="width: 33%;">• RFC 1643: Ethernet Interface MIB <li style="width: 33%;">• RFC 3046: DHCP Relay Agent Information Option <li style="width: 33%;">• RFC 793: TCP <li style="width: 33%;">• RFC 2068: HTTP <li style="width: 33%;">• RFC 3580: 802.1x RADIUS <li style="width: 33%;">• RFC 854: Telnet <li style="width: 33%;">• RFC 2131, 2132: DHCP <li style="width: 33%;">• RFC draft-ietf-opsawg-tacacs-09-TACACS+ <li style="width: 33%;">• RFC 959: FTP <li style="width: 33%;">• RFC 2236: IGMP v2 <li style="width: 33%;">• RFC 1157: SNMP <li style="width: 33%;">• RFC 2817 Upgrading to TLS Within HTTP/1.1 <li style="width: 33%;">• RFC 1901,1902- 1907 SNMPv2

Dimensions

All dimensions are shown in inches [millimeters].

iES8G with a DIN mount bracket



iES8G with a panel mount bracket installed at rear

iES8G with a panel mount bracket installed at side

SUPPORTED SFPs FOR iES8G

ORDER CODE	DESCRIPTION	PORTS 5-8
SFP100-MM-550	SFP 100Mbps Multimode LC Transceiver 550m, 850nm, -40°C to +85°C	•
SFP100-MM-2	SFP 100Mbps Multimode LC Transceiver 2km, 1310nm, -40°C to +85°C	•
SFP100-SM-20	SFP 100Mbps Singlemode LC Transceiver 20km, 1310nm, -40°C to +85°C	•
SFP100-SM-40	SFP 100Mbps Singlemode LC Transceiver 40km, 1300nm, -40°C to +85°C	•
SFP100-SM-60	SFP 100Mbps Singlemode LC Transceiver 60km, 1310nm, -40°C to +85°C	•
SFP100-SM-100	SFP 100Mbps Singlemode LC Transceiver 100km, 1550nm, -40°C to +85°C	•
SFP100-SM-120	SFP 100Mbps Singlemode LC Transceiver 120km, 1550nm, -40°C to +85°C	•
SFP1000-TX	SFP 1000Mbps TX RJ45 Transceiver 100m, -40°C to +85°C	•
SFP1000-MM-550	SFP 1Gbps Multimode LC Transceiver 550m, 850nm, -40°C to +85°C	•
SFP1000-MM-2	SFP 1Gbps Multimode LC Transceiver 2km, 1310nm, -40°C to +85°C	•
SFP1000-SM-10	SFP 1Gbps Singlemode LC Transceiver 10km, 1310nm, -40°C to +85°C	•
SFP1000-SM-20	SFP 1Gbps Singlemode LC Transceiver 20km, 1310nm, -40°C to +85°C	•
SFP1000-SM-40	SFP 1Gbps Singlemode LC Transceiver 40km, 1310nm, -40°C to +85°C	•
SFP1000-SM-60	SFP 1Gbps Singlemode LC Transceiver 60km, 1550nm, -40°C to +85°C	•
SFP1000-SM-80	SFP 1Gbps Singlemode LC Transceiver 80km, 1550nm, -40°C to +85°C	•

Ordering Information

BASE	POWER SUPPLY	MOUNT	ETHERNET PORT 1-4*	ETHERNET PORT 5&6	ETHERNET PORT 7&8	MOD	DESCRIPTION
iES8G	LV	D	4GRJ45	2GSFP	2GSFP	C1	
iES8G							Core assembly and packaging
	LV						Dual Input 10-48VDC
	MV						Single Input 36-75VDC with 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
			4GRJ45				4 X 10/100/1000Base-T(X) RJ45
				2GRJ45	2GRJ45		2 X 10/100/1000Base-T(X) RJ45
				2GSFP	2GSFP		2 X 100/1000Base-X (Blank no optical transceivers**)
				2GCX	2GCX		Combo* 2 X 10/100/1000Base-T(X) RJ45 and 2 X 100/1000Base-X (Blank no optical transceivers**)
						C1	Conformal Coating

* Combo of 2 ports is available (combo 2GCX for ports 5-6 and 7-8); only one type can be used for ports 5-6 and 7-8.

** See Accessories for SFP Transceiver Pricing; SFPs sold separately.

iES10G-S Sample Order Code

iES8G-HV-D-4GRJ45-2GSFP-2GSFP-iES20G

Description: 8 Port Gigabit Ethernet Switch—(Power Supply) Dual Input 10-48VDC, (Mount) DIN Rail Mounting, (Ethernet Port 1-4) 4 X 10/100/1000Base-T(X) RJ45, (Ethernet Port 5&6) – 2 X 100/1000Base, (Ethernet Port 7&8) 2 X 100/1000Base-X.

The same unit, may be ordered with conformal coating by appending 'C1' to the order code, for example:

iES8G-HV-D-4GRJ45-2GSFP-2GSFP-iES20G-C1

Description: 8 Port Gigabit Ethernet Switch—(Power Supply) Dual Input 10-48VDC, (Mount) DIN Rail Mounting, (Ethernet Port 1-4) 4 X 10/100/1000Base-T(X) RJ45, (Ethernet Port 5&6) – 2 X 100/1000Base, (Ethernet Port 7&8) 2 X 100/1000Base-X. This system will be conformal coated.



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For more information, visit is5com.com

General Inquiries: toll free: +1 844-520-0588 | info@is5com.com

Technical support: +1 844-475-8324 (+1 844-iS5-TECH) | support@is5com.com

Address: 5895 Ambler Drive, Mississauga, Ontario, L4W 5B7, Canada