

## iES10GF

Intelligent 10 Port Managed Gigabit Ethernet Switch  
IEC61850 and IEEE1613 Compliant



### Product Overview

The iES10GF is an intelligent 10 port managed Gigabit Ethernet switch with 7 x 10/100Base-T(X) RJ45 ports, up to 3 x 10/100/1000Base-T(X) RJ45 ports, up to 3 Combo of 10/100/1000Base-T(X) RJ45 and 100/1000Base-X ports, and up to 2 x 100/1000Base-X SFP ports. The switch is IEC61850-3 and IEEE1613 compliant.

The iES10GF provides redundancy support through functions such as STP/RSTP/MSTP assuring protection of all mission critical network applications. iES10GF 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"> <li>• STP / RSTP / MSTP</li> <li>• LLDP (Link Layer Discovery Protocol)</li> <li>• Modbus TCP</li> <li>• VLAN Priority—supports priority-tagged frames to be received by specific IEDs</li> <li>• HTTPS / SSH v2</li> <li>• SNTP for synchronizing the switch's clock</li> </ul>
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	

## PRODUCT SPECIFICATIONS

Table 2. Technical Specification

DESCRIPTION	SPECIFICATION
10/100BASE-T(X) RJ45	7
1 X 10/100/1000BASE-T(X) RJ45	Up to 3
COMBO*** 10/100/1000BASE-T(X) RJ45 AND 100/1000BASE-X	Up to 3
100/1000BASE-X SFP	Up to 2
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"> <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
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 $\mu$ s Switching bandwidth: 7.4 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"><li>• STP/RSTP/MSTP</li><li>• RADIUS for 802.1x authentication</li><li>• TACACS+ for user login authentication</li><li>• Port based network access control (NAS) 802.1x</li><li>• VLAN (802.1 Q) for segregation and securing network traffic enabled by GVRP</li><li>• SNMPv3 authentication and privacy encryption</li><li>• Management Security</li><li>• Port security and MAC Blacklist</li><li>• IP Guard</li><li>• HTTPS / SSH v2</li><li>• Web and CLI authentication and authorization</li></ul>
SOFTWARE FEATURES	<ul style="list-style-type: none"><li>• Web or CLI based Management (RS-232 Serial Console or Telnet / SSH v2)</li><li>• HTTPS</li><li>• DHCP Server /Client / Relay</li><li>• VLAN—Port-based (untagged) and 802.1Q (tagged)</li><li>• Supports SNMPv1/v2/v3</li><li>• Traffic Prioritization—QoS, Port-based Priority, COS/802.1p, TOS/DSCP</li><li>• Multicast traffic—IGMP Snooping (IGMP v2 / v3), MVR, Static Multicast Filtering</li><li>• Warnings (SYSLOG and SMTP), Fault Alarm (power and ports failure), and Event Selection</li><li>• Monitoring and Diagnostics—MAC Table and Port Statistics, Counters, and Monitoring, System Event Log, Traffic Monitoring, and Ping</li><li>• SNTP for synchronizing of clocks over network</li></ul>
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)	133.7 (W) x 159.4 (D) x 203 (H) mm (5.27 x 6.28 x 8.00 inches) Panel mount 133.7 (W) x 167.1 (D) x 173.2 (H) mm (5.27 x 6.58 x 6.82 inches) DIN rail
WEIGHT (G)	~2.3 kg

## POWER

INPUT POWER	Redundant Power Supplies: Dual Input 10-48VDC, Dual Input 36-75VDC, or Dual Input 110-370VDC or 90-264VAC
POWER CONSUMPTION (TYP.)	12 Watts
OVERLOAD CURRENT PROTECTION	Present
REVERSE POLARITY PROTECTION	Internal

# Product Specifications

Table 3. Compliance Specification

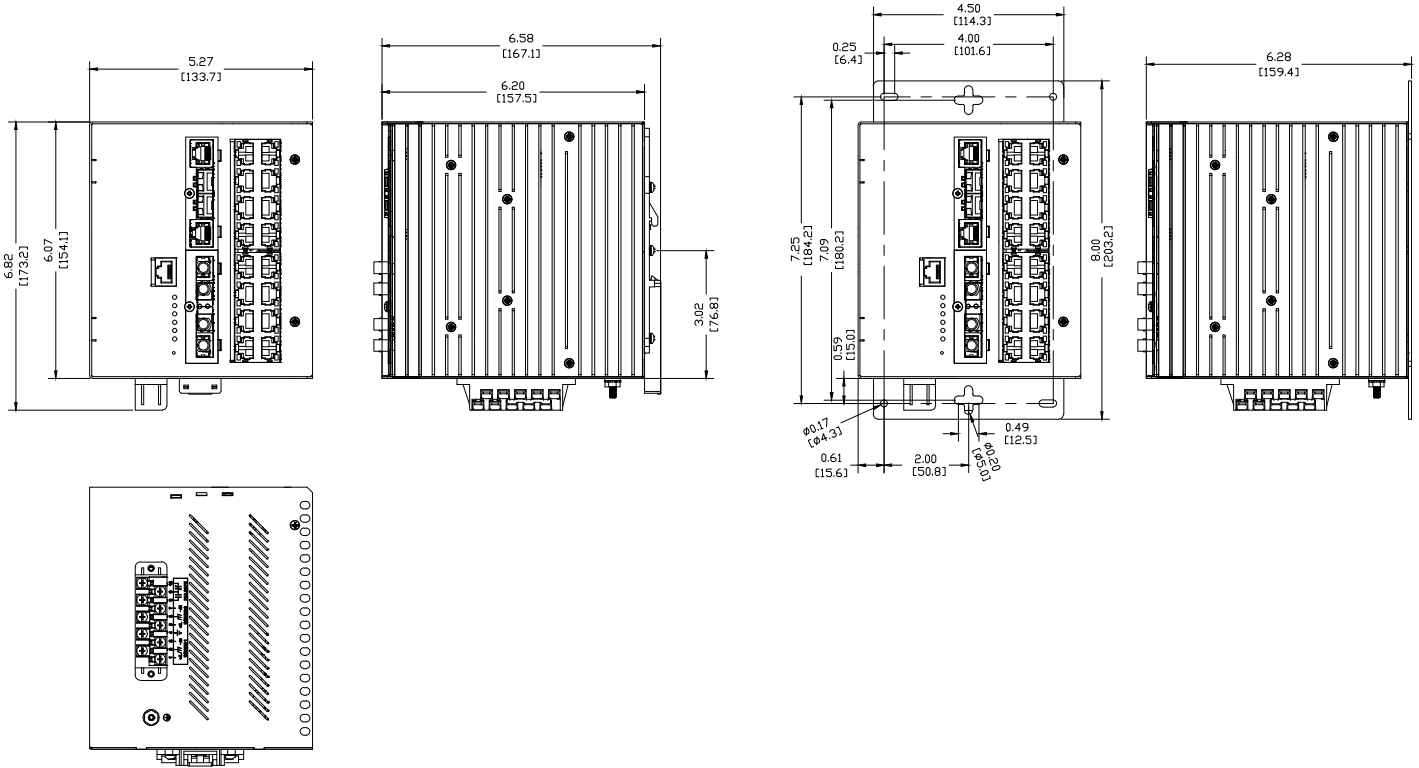
TYPE	STANDARDS
ELECTROMAGNETIC EMISSIONS	FCC Part 15, CISPR (EN55022) class A, EN50155 (EN50121-3-2, EN55011, EN50121-4)
ELECTROMAGNETIC IMMUNITY	EN61000-4-2 (ESD), EN61000-4-3 (RS), EN61000-4-4 (EFT), EN61000-4-5 (Surge), EN61000-4-6 (CS), EN61000-4-8, EN61000-4-11
SAFETY STANDARDS	EN60950-1
OPERATING ENVIRONMENT	-40°C to +85°C (-40o 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	295738 Hours / 33 Years (Operating Temperature: 55°C)

Table 4. Standards and Management

DESCRIPTION	SPECIFICATION
IEEE STANDARDS	<ul style="list-style-type: none"> <li>IEEE 802.3 for 10Base-T</li> <li>IEEE 802.3u for 100Base-TX and 100Base-FX</li> <li>IEEE 802.3ab for 1000Base-T</li> <li>IEEE 802.z for 1000Base-X</li> <li>IEEE 802.3x for Flow control</li> <li>IEEE 802.1D Spanning Tree Protocol</li> <li>IEEE 802.1w -2001 Rapid Spanning Tree Protocol (RSTP)</li> <li>IEEE 802.1D-2004 Rapid Spanning Tree Protocol (RSTP:2004)</li> <li>IEEE 802.1X-2010 Port Based Network Access Control</li> <li>IEEE 802.1AB – 2016 Station and Media Access Connectivity discovery (LLDP)</li> </ul>
RFC COMPLIANCE	<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: SNMP</li> <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 2068: HTTP</li> <li>• RFC 21 31, 2132: DHCP</li> <li>• RFC 2817 Upgrading to TLS Within HTTP/1.1</li> <li>• RFC 2818 HTTP Over TLS</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 draft-ietf-opsawg-tacacs-09 -TACACS+</li> </ul>

# Dimensions

All dimensions are shown in inches [millimeters].



## SUPPORTED SFPs FOR iES10GF

ORDER CODE	DESCRIPTION	PORT G1-G3
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-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 1	POWER SUPPLY 2	MOUNT	ETHERNET PORT 1-7(8)*	ETHERNET PORT 9 & 10	MOD	DESCRIPTION
iES10GF	HV	LV	D	7RJ45&1GRJ45	2GRJ45	C1	
iES10GF							Managed core assembly and packaging
		XX					None
	LV	LV					Input 9-36VDC
	MV	MV					Input 36-75VDC
	HV	HV					Input 110-370VDC or 90-264VAC
			D				DIN Rail Mounting
			P				Panel Mounting
			N				No Mounting Hardware
							None
				7RJ45&1GRJ45			7 X 10/100Base-T(X) RJ45 and 1 X 10/100/1000Base-T(X) RJ45
				7RJ45&1GCX			Combo** 1 X 10/100/1000Base-T(X) RJ45 and 1 X 100/1000Base-X
					XX		None
					2GRJ45		2 X 10/100/1000Base-T(X) RJ45
					2GSFP		2 X 100/1000Base-X SFP
					2GCX		Combo** 2 X 10/100/1000Base-T(X) RJ45 and 2 X 100/1000Base-X
						C1	Conformal Coating

\* Port 9&10 cannot be XX when 7RJ45&1GCX is selected

\*\* Combo of the 2 ports available, only 1 Port can be used in

## iES10GF Sample Order Code

iES10GF-HV-LV-D-7RJ45&1GCX-2GRJ45

Description: 61850 10 Port Ethernet Switch with a combination of Gig ports, (Power Supply 1) Input 10-48VDC, (Power Supply 2) Input 9-36VDC, (Mount) DIN Rail Mounting, (Ethernet Port 1-8) 7 X 10/100Base-T(X) RJ45 and 1 X 10/100/1000Base-T(X) RJ45, (Ethernet Port 9 -10) 2 X 10/100/1000Base-T(X) RJ45.

The same unit, may be ordered with conformal coating by appending '-C1' to the order code, for example: iES10GF-HV-LV-D-7RJ45&1GCX-2GRJ45-C1

Description: 61850 10 Port Ethernet Switch with a combination of Gig ports, (Power Supply 1) Input 10-48VDC, (Power Supply 2) Input 9-36VDC, (Mount) DIN Rail Mounting, (Ethernet Port 1-8) 7 X 10/100Base-T(X) RJ45 and 1 X 10/100/1000Base-T(X) RJ45, (Ethernet Port 9 -10) 2 X 10/100/1000Base-T(X) RJ45. This system will be conformal coated.



**For more information, visit: [is5com.com](http://is5com.com)**

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