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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	• 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
10/100BASE-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	• 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 μs Switching bandwidth: 7.4 Gbps Max. Number of Available VLANs: 4096 IGMP multicast groups: 32 Port rate limiting: User Defined

Specifications are subject to change without notice.   Questions? Call: +1.844.520.0588

Product Specifications

TECHNOLOGY

SECURITY FEATURES	• 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	• Web or CLI based Management (RS-232 Serial Console or Telnet / SSH v2) • HTTPS • 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)	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 24VDC(Nom), 10-36VDC (Oper), or Dual Input 48VDC(Nom), 36-75VDC (Oper), or Dual Input 145-240VDC(Nom), 125-300VDC(Oper) or 100-240VAC(Nom), 88-264VAC(Oper) 50/60Hz
POWER CONSUMPTION (TYP.)	12 Watts
OVERLOAD CURRENT PROTECTION	Present
REVERSE POLARITY PROTECTION	Internal

Product Specifications

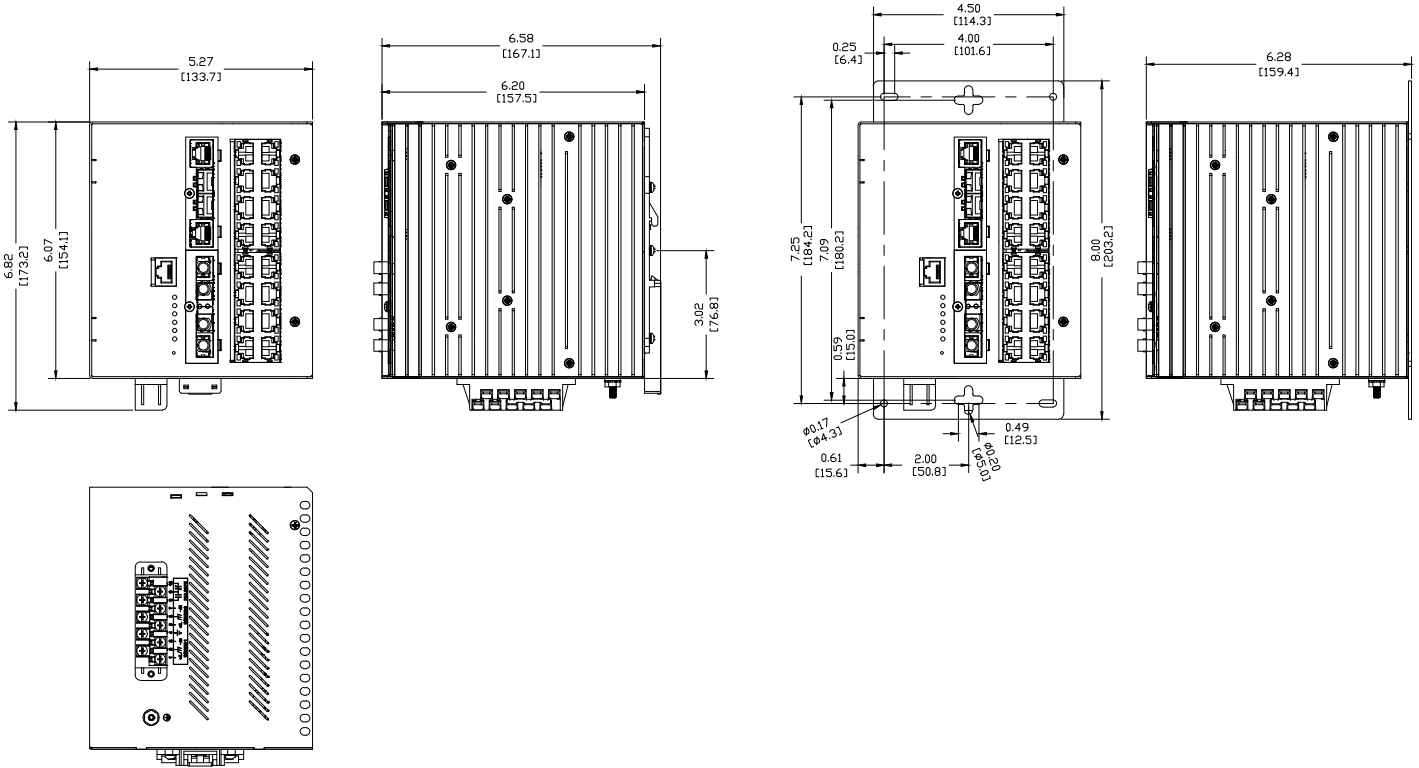Table 3. Compliance Specification

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	-40ºC to +85ºC (-40o to 185ºF) (no fans) EN 60068-2-21
STORAGE ENVIRONMENT	-40ºC to +85ºC (-40º to 185ºF) 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	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 802.1D 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	• RFC 768: UDP • RFC 783: TFTP • RFC 791: IPv4 • RFC 792: ICMP • RFC 793: TCP • RFC 854: Telnet • RFC 959: FTP • RFC 1157: SNMP • RFC 1901,1902- 1907 SNMPv2	• RFC 2273-2275: SNMPv3 • RFC 2571: SNMP Management • RFC 1166: IP Addresses • RFC 1643: Ethernet Interface MIB • RFC 2068: HTTP • RFC 21 31, 2132: DHCP	• RFC 2817 Upgrading to TLS Within HTTP/1.1 • RFC 2818 HTTP Over TLS • RFC 3376: IGMP v3 • RFC 2474: DiffServ Precedence • RFC 3046: DHCP Relay Agent Information Option • RFC 3580: 802.1x RADIUS • RFC draft-ietf-opsawg-tacacs-09 -TACACS+

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

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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.

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