

# iES26GF

Intelligent 26 Port Configurable Switch  
IEC 61850 and IEEE 1613 Compliant

## Product Overview



iES26GF is an intelligent Ethernet switch designed to withstand the harshest environments of utility substations and rolling stock applications. The iES26GF provides redundancy support through functions such as STP/RSTP/MSTP assuring protection of all mission critical network applications.

iES26GF can be managed via the Web UI, iManage Software Suite, Telnet, and Console (CLI) / SSH v2.

- **IP-based Bandwidth Management**—for limiting maximum bandwidth of every IP device and configuring an IP camera and NVR with dedicated bandwidth
- **Application-Based QoS**—the switch also supports application-based QoS. Application-based QoS can be set with the highest priority for data streaming according to TCP/UDP port number.
- **Device Binding**—effectively binds the IP/MAC address of a device connected to the switch port. If the IP/MAC address of the connected device does not match the switch port binding information, the device will be blocked for security; other active network traffic protection and maintenance tools include Alive Check, Stream Check, and DoS/DDoS auto-prevention.



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# 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)</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 clocks</li></ul>
IGMP v2 / v3 (IGMP Snooping)	
SNMP v1 / v2c /v3 & RMON	
ACL, AAA (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 suite running on Windows 10, NT/2000/XP/2003/VISTA/7	
19 inches rack mountable	



# Product Specifications

**Table 2. Technical Specification**

Description	Specification
<b>10/100Base-T(X) RJ45</b>	24
<b>10/100/1000Base-T(X) RJ45, or 1000Base-X SFP, or 1000SX MM ST/SC, or 1000LX SM ST/SC</b>	2
<b>RS-232 Serial Console Port</b>	RS-232 in RJ-45 connector with console cable. 115200 bps, 8, N, 1
<b>Warning /Monitoring System</b>	Relay output for fault event alarming Syslog server / client to record and view events SMTP for event warning notification via email
<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: 8.8 Gbps Max. Number of Available VLANs: 4096 IGMP multi cast groups: 32 for each VLAN Port rate limiting: User Defined
<b>Jumbo frame</b>	9.6 K
<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 (802.1Q) for segregation and securing network traffic</li> <li>• SNMPv3 authentication and privacy encryption</li> <li>• HTTPS / SSH v2 enhanced network security</li> <li>• Web and CLI authentication and authorization</li> </ul>
<b>Software Features</b>	<ul style="list-style-type: none"> <li>• Web or CLI based Management (RS-232 Serial Console or Telnet / SSH v2)</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> </ul>



Description	Specification
	<ul style="list-style-type: none"><li>• Multicast traffic—IGMP Snooping (IGMP 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 ICMP PING packets for troubleshooting IP connectivity issues)</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</li><li>• Dual Port Recovery</li></ul>
<b>Physical Characteristic</b>	
<b>Enclosure</b>	IP40 galvanized steel
<b>Dimension (W x D x H)</b>	486 (W) x 290 (D) x 44 (H) mm (19.12 x 11.41x 1.74 inches)
<b>Weight (g)</b>	3.900 g.
<b>Power</b>	
<b>Redundant Power Input</b>	Dual Power Supplies with dual input of 18-36VDC or 36-75VDC, or dual input of 110-370VDC or 90-264VAC
<b>Overload Current Protection</b>	Present



**Table 3. Compliance Specifications**

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
Industry Standards	IEC 61850-2, IEEE 1613
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

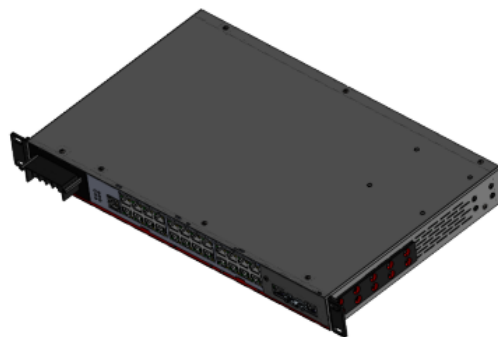
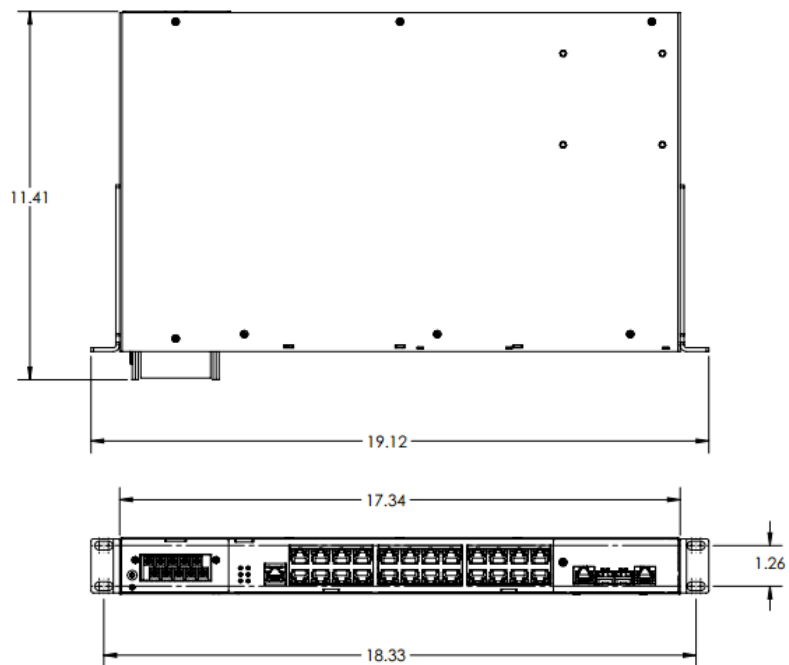
**Table 4. Standards and Management**

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 802.3ad for LACP (Link Aggregation Control Protocol)</li> <li>IEEE 802.1D Spanning Tree Protocol (STP)</li> <li>IEEE 802.1W Rapid Spanning Tree Protocol (RSTP)</li> <li>IEEE 802.1Q – 2014 Bridged Networks</li> <li>IEEE 802.1-2010 Port Based Network Access Control</li> <li>IEEE 802.1AB – 2016 Station and Media Access Connectivity discovery (LLDP)</li> <li>IEEE 802.1AX Link Aggregation</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: 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>

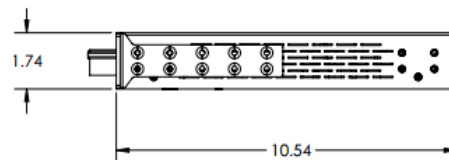


## Dimensions

All dimensions are shown in inches.



\*FRONT TB VERSION SHOWN





# Ordering Information

Base	Power Supply 1	Power Supply 2	Mount	Power Terminals	Ethernet Port 1-8	Ethernet Port 9-16	Ethernet Port 17-24	Ethernet Port 25&26	Conformal Coating	Description
iES26GF	LV	XX	R	R	8RJ45	8RJ45	8RJ45	2GRJ45		
iES26GF										Core assembly and packaging
		XX								None
	LV	LV								Input 18-36VDC
	MV	MV								Input 36-75VDC
	HV	HV								Input 110-370VDC or 90-264VAC
			R							Rack Mounting
			P							Panel Mounting
			N							No Mounting Hardware
				F						Power Terminals in the Front with Ethernet Ports/ Display Rear opposite Ethernet Ports
				R						Power Terminals in the Rear opposite Ethernet Ports/ Display Front with Ethernet Ports
						XX	XX			None
					8RJ45	8RJ45	8RJ45			8 X 10/100Base-T(X) RJ45
								XX		None
								2GRJ45		2 X 10/100/1000Base-T(X) RJ45
								2GSFP		2 X 1000Base-X SFP
								2GCX		Combo** 2 X 10/100/1000Base-T(X) RJ45 and 2 X 1000Base-X SFP
								2MMSC		2 X 100FX Multimode SC, 1310nm, 2km
								2MMST		2 X 100FX Multimode ST, 1310nm, 2km
								2SMSC15		2 X 100FX Singlemode SC, 1310nm, 15km
								2SMST15		2 X 100FX Singlemode ST, 1310nm, 15km
								2SMSC40		2 X 100FX Singlemode SC, 1310nm, 40km
								2SMST40		2 X 100FX Singlemode ST, 1310nm, 40km
								2SMSC60		2 X 100FX Singlemode SC, 1310nm, 60km
								2SMST60		2 X 100FX Singlemode ST, 1310nm, 60km
								2SMSC80		2 X 100FX Singlemode SC, 1550nm, 80km
								2SMST80		2 X 100FX Singlemode ST, 1550nm, 80km
								2SMSC100		2 X 100FX Singlemode SC, 1550nm, 100km
								2SMST100		2 X 100FX Singlemode ST, 1550nm, 100km
								2GMMSC		2 X 1000SX Multimode SC, 850nm, 550m
								2GMMST		2 X 1000SX Multimode ST, 850nm, 550m
								2GSMST10		2 X 1000LX Singlemode SC, 1310nm, 10km
								2GSMSC10		2 X 1000LX Singlemode ST, 1310nm, 10km
								2GSMSC40		2 X 1000LX Singlemode SC, 1310nm, 40km
								2GSMST40		2 X 1000LX Singlemode ST, 1310nm, 40km
								2GSMSC70		2 X 1000LX Singlemode SC, 1550nm, 70km



Base	Power Supply 1	Power Supply 2	Mount	Power Terminals	Ethernet Port 1-8	Ethernet Port 9-16	Ethernet Port 17-24	Ethernet Port 25&26	Conformal Coating	Description
								2GSMST70		2 X 1000LX Singlemode ST, 1550nm, 70km
									C1	Conformal Coating

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

**Example of Order Description:**

**iES26GF-LV-XX-RR-8RJ45-8RJ45-8RJ45-2GRJ45**  
**26 Port 61850 Ethernet Switch with combination Gigabit ports, (Power Supply 1) Input 18-36VDC, (Power Supply 2) None, (Mount and Power Terminals) Rack Mounting and Power Terminals in the Rear opposite Ethernet Ports/Display Front with Ethernet Ports, (Ethernet Port 1-8) 8 X 10/100Base-T(X) RJ45, (Ethernet Port 9-16) 8 X 10/100Base-T(X) RJ45, (Ethernet Port 17-24) 8 X 10/100Base-T(X) RJ45, (Ethernet Port 25&26) 2 X 10/100/1000Base-T(X) RJ45, Conformal coating - none.**