iS5 COMMUNICATIONS

SERVICES • SUPPORT • SECURITY • SOLUTIONS • SYSTEMS

Data Sheet

iSG18GFP

Intelligent 18 Port Compact Service Aware Ethernet Switch
IEC 61850-3 and IEEE 1613 Compliant

Features

- **Designed for secure remote connections over public networks**
- **Authentication Proxy Access (APA)**
- **Network Uplink over Ethernet or Cellular**
- **Distributed DPI firewall**
- **IPSec VPN**
- **Local and Remote User Authentication (RADIUS, TACACS)**
- **Supports:**
  - **4 x RS232 ports with enhanced 2kV isolation, or 2 x RS232 and 2RS485**
  - **2 x 100/1000 Base X SFP, 8 x 10/100 Base T(X) RJ45 with Optional PoE, and Optional 8 x 100 Base X SFP Ethernet Ports**
  - **Dual SIM Cellular 2G/3G/LTE Modes (Dual antennas for MIMO)**
  - **Layer 3 protection using Dynamic protocols like OSPF, VRRP Redundancy Scheme, and RIPv2**
  - **Gateway Translation for IEC 101/104, Modbus RTU/ TCP and DNP3 TCP/RTU**
- **DIN Rail or wall mount option**
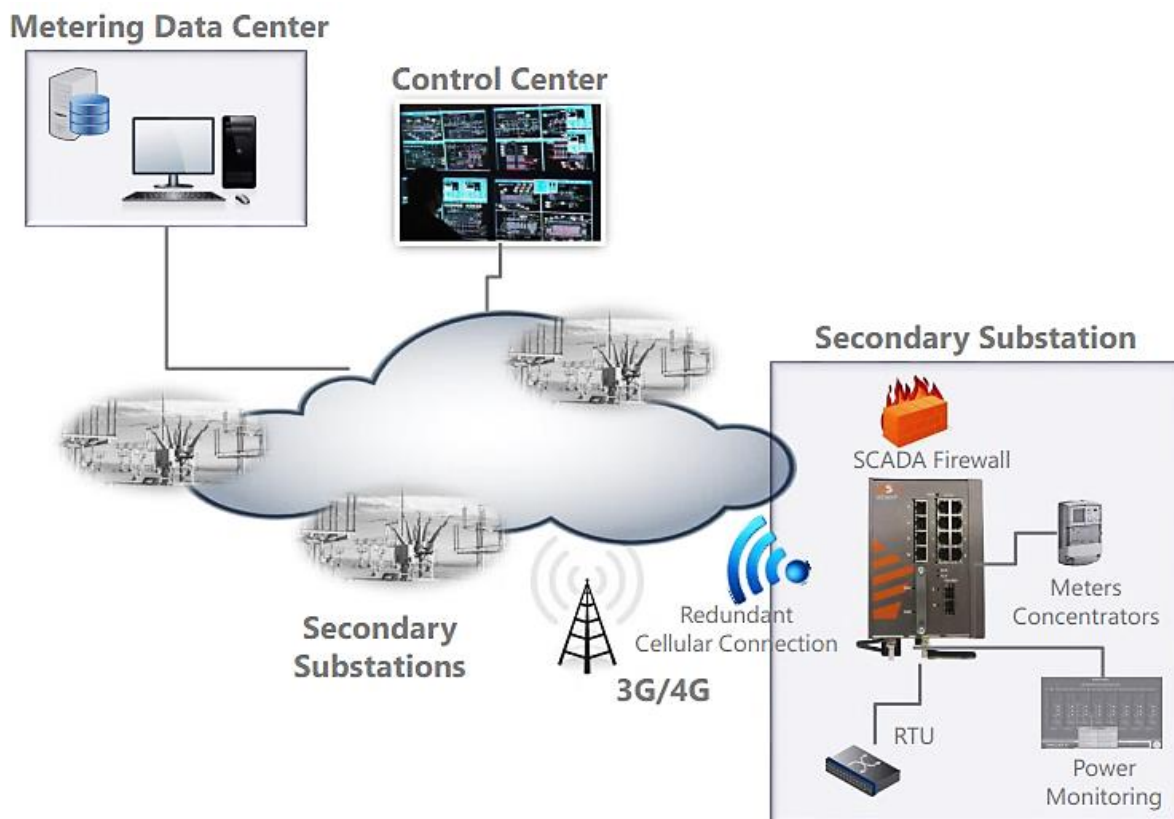- **Available with dual power supplies**

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Introduction

The iSG18GFP is a powerful Compact Service-Aware Ethernet switch designed with a unique strong packet processing application-aware engine to fit the most critical industrial application. The optional support of an integrated firewall on each port of the iSG18GFP provides a network based distributed security. The switch also contains a VPN gateway with 2 operational modes: Inter-site connectivity using IPSec tunnels and remote user access via SSH. The iSG18GFP is a natural fit for installation at MV/LV Transformer Sites acting as secure access points for the Distributed Automation control of remote sites. This product acts as a secure gateway for Ethernet, IP, and Serial services as an optimized platform for servicing these needs over the network core. The iSG18GFP can be managed centralized and conveniently by a powerful Windows utility called the (iDMS) Industrial Device Management System. The product is made from galvanized steel and has a wide operating temperature from -40°C to +85°C suitable for the harshest of environments without the use of fans. The iSG18GFP provides maximum protection against cyber threats.

Secure connection using the iSG18GFP

Specifications

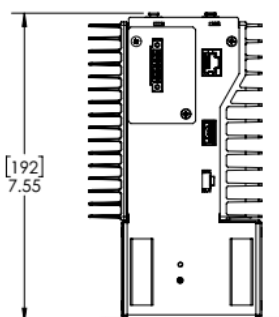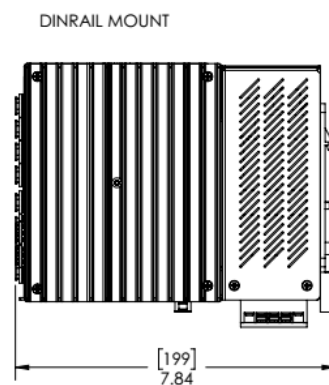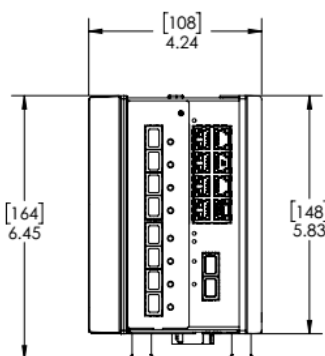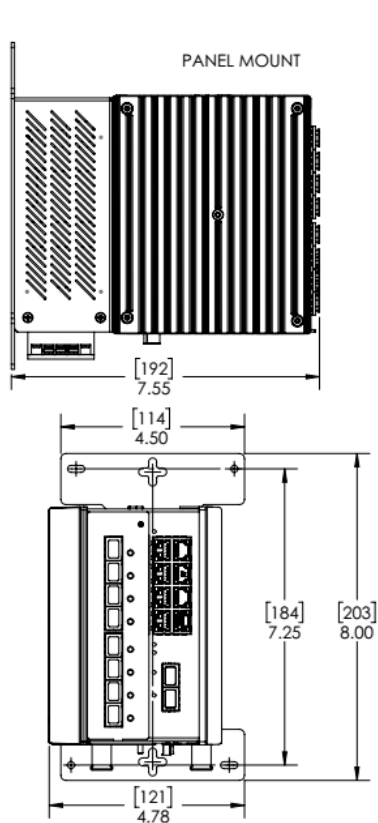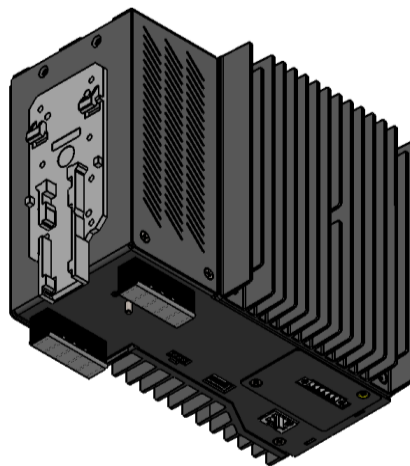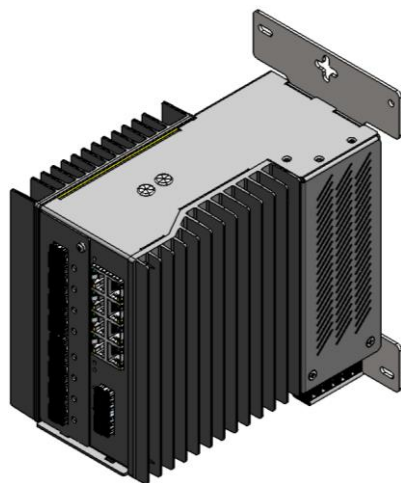| Model Number iSG18GFP	
Physical Ports	
10/100 Base T(X) Ports with optional PoE+	8
100 Base-X SFP Ports	8
100 / 1000 Base-X SFP Ports	2
RS-232 Serial Ports (opt.)	4 with 2kV Isolation
Dual SIM Cellular Modem (opt.)	3G/LTE
Technology	
Networking (Advance Layer 2)	IEEE 802.3 for 10Base-T ITU-T G.8032v2 Ethernet ring (<50ms recovery) IEEE 802.1s MSTP IEEE 802.1w RSTP IEEE 802.3ad LAG with LACP IEEE 802.1q VLAN segregation Access Lists according to L2-L4 headers IEEE 802.1p per port queues 802.1x Port based network access control DHCP Client and Relay QOS Prioritization, shaping, Scheduling OAM EFM IEEE 802.3ah OAM CFM ITU-T Y.1731/IEEE 802.1ag 1588v2 PTP Transparent Clock
Routing (Layer 3)	Static Routing OSPF V2, V3 RIPv2 VRRP
Protocol Handling	Transparent tunneling of serial streams SCADA gateway for IEC101/104, ModBus RTU/TCP and DNP3 Terminal Server Byte / Frame mode
Performance	Line Rate L2/L3 Switching Throughput Switching Latency <10µSec 16K MAC Addresses 4K VLANs L2 Multicast IGMP Snooping for Traffic Optimization
Security Features	**Authentication Proxy access (APA)** L2 and L3 authentication SSH authentication Open VPN authentication APA rules sublet based APA Static user table support **DPI Firewall** Profile Based and with security rules planning per service group Monitoring, Enforcement, and Learning Modes IEC 101/104 /61850 mms DPI ModBus RTU / TCP DNP3 RTU /TCP **VPN** IPsec Certificates X.509 IPsec CRL or CA server IPsec dynamic Key Exchange IPsec AES or 3DES Encryption L3 IPsec policy based VPN L3 IPsec route based VPN L3 mGRE DM-VPN L2 VPN GRE

Model Number iSG18GFP

Security Features (cont.)	Access control	Remote access using SSH filter SNMPv1/v2/v3 Enable/disable port Port access filter per MAC / IP addresses IEEE 802.1x port-based authentication User activity report (under local APA) Access Lists L2 Access Lists L3 NAT traversal
Local Operation		RS‑232 console port Local USB port for emergency boot Discrete outputs reporting system alarms

Power

Input Power	Dual DC inputs 9 to 36VDC, Dual DC Inputs 36-75VDC, or Dual input universal supply 130-370VDC or 90-264 VAC

Physical Characteristics

Enclosure	IP-40 Galvanized Steel
Dimensions (W x D x H)	See Dimensions
Unit Weight (g)	Min. weight~ 1600g; Max. weight~ 1900g; Weight varies as per configuration.

Environmental

Storage Temperature	-40 to +85°C (-40 to 185°F)
Operating Temperature	-40 to +85°C (-40 to 185°F) No Fans
Operating Humidity	5% to 95% Non-condensing

Compliance

IEC & IEEE	IEC 61850-3, IEEE 1613, IEC 60255-21
Electromagnetic Compatibility (EMC)	EN50121-4

Warranty

Warranty	5 Years

Dimensions

All dimensions are shown in inches.

PANEL MOUNT

[108] 4.24

[164] 6.45

[148] 5.83

DINRAIL MOUNT

[192] 7.55

[199] 7.84

[114] 4.50

[184] 7.25

[203] 8.00

[192] 7.55

[121] 4.78

Version iSG18GFP 8SFP-2GSFP-8RJ45 shown

All dimensions are shown in inches.

PANEL MOUNT

[88]
3.45

[170]
6.71

[148]
5.83

DINRAIL MOUNT

[202]
7.93

([194]
7.64)

[114]
4.50

[184]
7.25

[203]
8.00

[194]
7.64
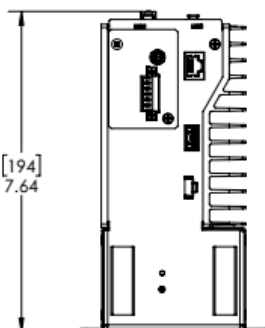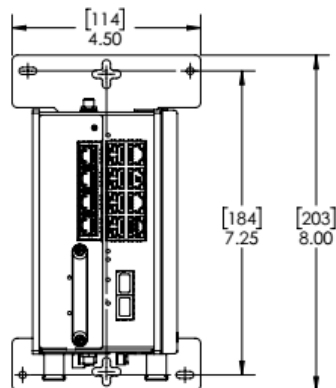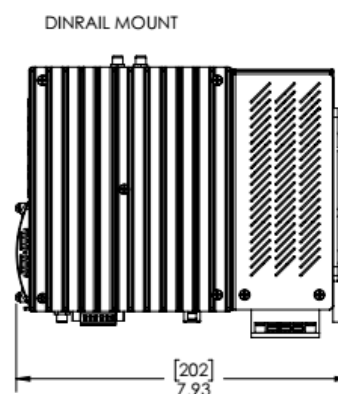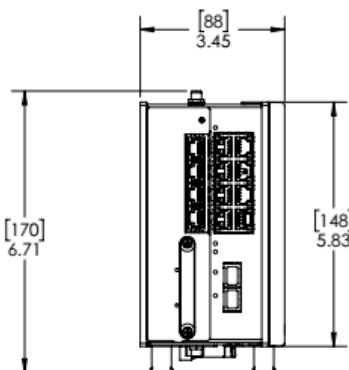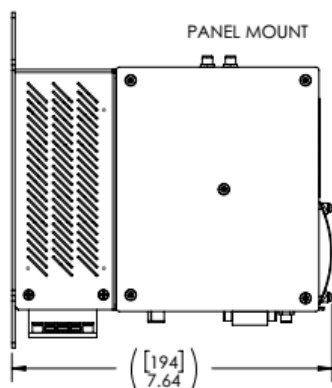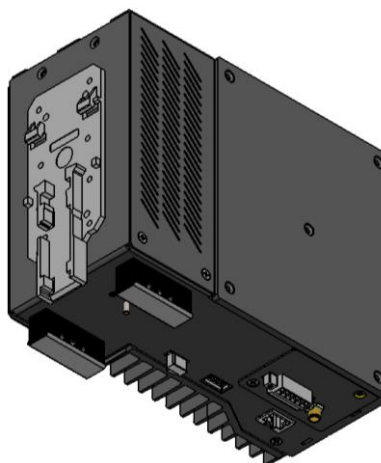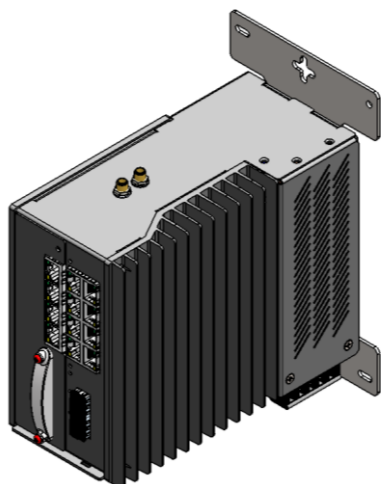
Version iSG18GFP 8RJ45-2GSFP-4RJ45-2SIM shown

Ordering Information

Base	Power Supply 1	Power Supply 2	Mount	Ethernet Port 1-8	Ethernet Port 9-10	Option 1	Option 2****	Cellular Port	Security Enhanced	Conformal Coating	Description
iSG18GFP	HV	HV	D	8RJ45	2GSFP	4SFP	4SFP	XX	SE	C1	
iSG18GFP	|	|	|	|	|	|	|	|	|	|	Core assembly and packaging
	|	XX	|	|	|	|	|	|	|	|	None
	LV	LV	|	|	|	|	|	|	|	|	Input 9-36VDC
	MV	MV	|	|	|	|	|	|	|	|	Input 36-75VDC
	HV	HV	|	|	|	|	|	|	|	|	Input 130-370VDC or 90-264VAC
	HV (PoE)		|	|	|	|	|	|	|	|	Input for PoE 90-250VAC
			D	|	|	|	|	|	|	|	DIN Rail Mounting
			P	|	|	|	|	|	|	|	Panel Mounting
			N	|	|	|	|	|	|	|	No Mounting Hardware
				8RJ45	|	|	|	|	|	|	8 X 10/100Base-T(X) RJ45
				8PRJ45	|	|	|	|	|	|	8 X 10/100Base-T(X) RJ45 PoE (30W Max per port***)
				XX	|	|	|	|	|	|	None
				2GSFP	|	|	|	|	|	|	2 X 100/1000Base-X SFP (Blank no optical transceivers**)
					XX	XX	|	|	|	|	None
					4SFP	4SFP	|	|	|	|	4 X 100Base-X SFP (Blank no optical transceivers**)
					4RJ45	4RJ45	|	|	|	|	4 X 10/100Base-T(X) RJ45
					4SRJ45		|	|	|	|	4 X RS232 RJ45 Serial (with 2kV Isolation)
							XX	|	|	|	None
							2SIM-LTE1	|	|	|	Dual SIM LTE Modem with 3G fallback, International
							2SIM-LTE2	|	|	|	Dual SIM LTE Modem with 3G fallback, Americas (AT&T, Generic)
							2SIM-LTE3	|	|	|	Dual SIM LTE Modem with 3G fallback, Americas (Verizon)
							2SIM-LTE4	|	|	|	Dual SIM LTE Modem with 3G fallback, Americas (Sprint)
							2SIM-LTE5		|	|	Dual SIM LTE Modem with 3G fallback, Americas (Bell, Rogers, Telus)
									SE		Security Enhanced License
										C1	Conformal Coating

**SEE ACCESSORIES FOR SFP TRANSCEIVER PRICING
***PoE Ports only supported with HV and MV power supplies
****Cellular options not available with Option 2 populated, Port types cannot be mixed between Option 1 and Option 2

Example Order Code   iSG18GFP-HV-HV-D-8RJ45-2GSFP-4SFP-4SFP-SE-C1
Description: **18 Port Secure Gateway/Switch, (Power Supply 1) Input 130-370VDC or 90-264VAC, (Power Supply 2) Input 130-370VDC or 90-264VAC , DIN Rail Mounting, (Ethernet Port 1-8) 8 X 10/100Base-T(X) RJ45, (Ethernet Port 9-10) 2 X 100/1000Base-X SFP (Blank no optical transceivers**), (Option 1) 4 X 100Base-X SFP (Blank no optical transceivers**), (Option 2****), 4 X 100Base-X SFP (Blank no optical transceivers**), Cellular port - none, Security Enhanced License - SE, C1 - added for conformal coating.**

List of SFPs to be ordered separately

iS5Com #	Description
SFP100-MM-2-SG	SFP 100Mbps Multimode LC Transceiver 2km, 1310nm, -40°C to +85°C
SFP100-SM-10-SG	SFP 100Mbps Singlemode LC Transceiver 10km, 1310nm, -40°C to +85°C
SFP100-SM-40-SG	SFP 100Mbps Singlemode LC Transceiver 40km, 1310nm, -40°C to +85°C
SFP1000-MM-2-SG	SFP 1Gbps Multimode LC Transceiver 2km, 1310nm, -40°C to +85°C
SFP1000-SM-10-SG	SFP 1Gbps Singlemode LC Transceiver 10km, 1310nm, -40°C to +85°C
SFP1000-SM-40-SG	SFP 1Gbps Singlemode LC Transceiver 40km, 1310nm, -40°C to +85°C
SFP-SGMI-TX-SG	SFP 10/100/1000Mbps TX RJ45, SGMII Transceiver 100m, -40°C to +85°C