

iSG18GFP

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



Product Overview

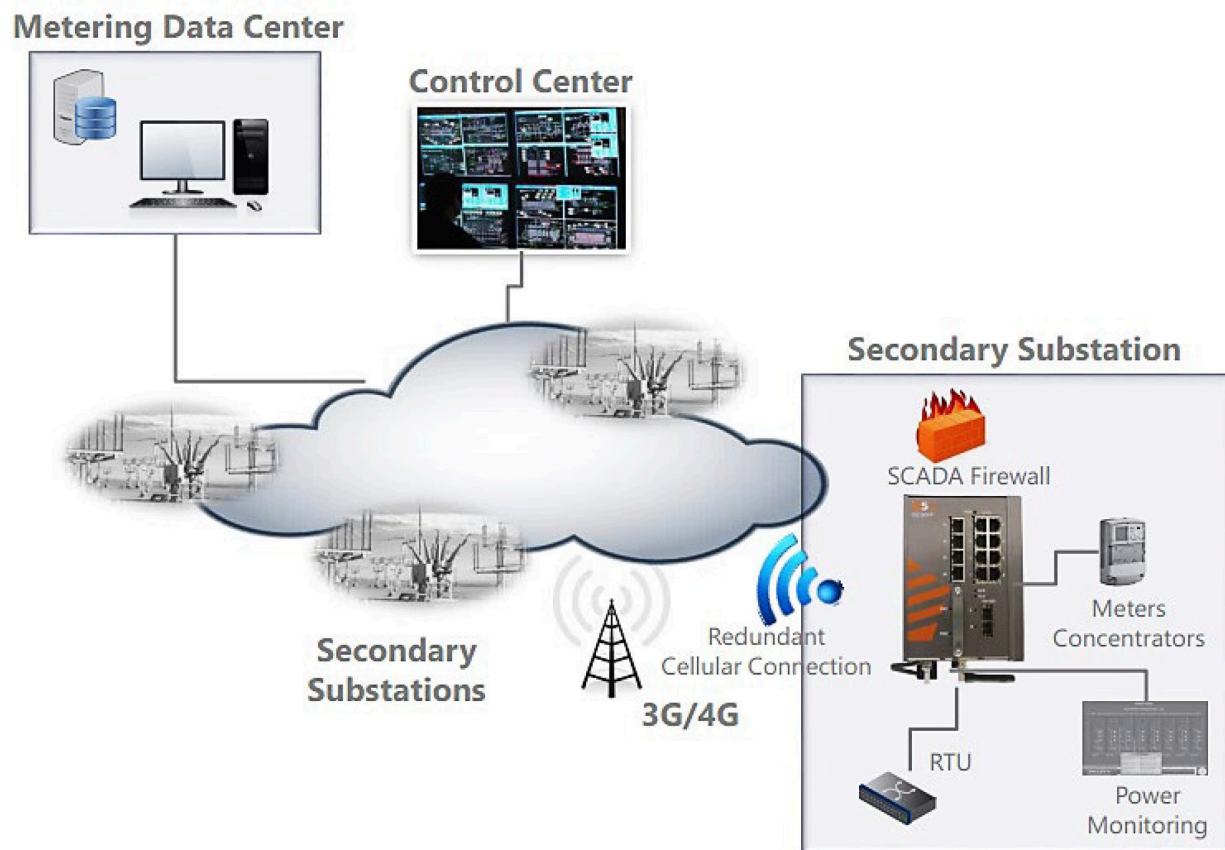
The iSG18GFP is a powerful Compact Service-Aware Ethernet switch designed with a specialized packet processing application-aware engine built for critical industrial applications. It can provide any remote critical site with robust cyber security protection whilst providing a variety of services including:

- Ethernet switching including optional PoE
- Routing (RIPv2, OSPF, VRRP)
- DPI firewall & Authentication Proxy Access (APA)
- Secure VPN connectivity (Site to Site)
- Serial to Ethernet Gateway
- iDMS Windows Management Software

The iSG18GFP is a natural fit for installations such as LV/MV transformer sites acting as a secure access point for the Distributed Automation control of remote sites.

The iSG18GFP is made of strong galvanized steel and supports a wide operating temperature from -40°C to +85°C making it ideal for the harshest of environments without relying on fans.

Network Architecture



Secure connection using the iSG18GFP

Features and Benefits

Table 1. Features

FEATURE	
SUPPORTS	<ul style="list-style-type: none"> • 4 x RS232 ports with enhanced 2kV isolation • 2 x 100/1000Base-X SFP, 8 x 10/100Base-T(X) RJ45 with optional PoE, and optional 8 x 100Base-X SFP Ethernet Ports • Dual SIM Cellular 3G/LTE Modes (dual antennas for MIMO) • Security Enhanced features: Authentication Proxy Access (APA), Event Logger, IPsec(X.509), and Deep Packet Inspection (DPI) firewall • IPsec VPN • Layer 3 protection using dynamic protocols such as OSPF, VRRP redundancy scheme, and RIPv2 • Gateway Translation for IEC 101/104, Modbus RTU/ TCP and DNP3 TCP/RTU
<ul style="list-style-type: none"> • DESIGNED FOR SECURE REMOTE CONNECTIONS OVER PUBLIC NETWORKS • NETWORK UPLINK OVER ETHERNET OR CELLULAR • DISTRIBUTED DPI FIREWALL • LOCAL AND REMOTE USER AUTHENTICATION (RADIUS & TACACS) 	
SINGLE OR DUAL REDUNDANT POWER SUPPLY OPTIONS	
DIN-RAIL AND PANEL WALL MOUNT	

PRODUCT SPECIFICATIONS

Table 2. Technical Specification

MODEL NUMBER iSG18GFP

PHYSICAL PORTS	
10/100BASE T(X) PORTS RJ45	Up to 16
10/100BASE T(X) PORTS WITH OPTIONAL PoE+	Up to 8
10/100BASE T(X) PORTS RJ45	Up to 8
100BASE-X SFP PORTS	Up to 2
RS-232 RJ45 SERIAL PORTS (OPT.)	4 with 2kV Isolation
DUAL SIM CELLULAR MODEM (OPT.)	3G/LTE
TECHNOLOGY	
NETWORKING (ADVANCED LAYER 2)	IEEE 802.3 for 10Base-T IEEE 802.1s MSTP IEEE 802.1w RSTP IEEE 802.3ad LAG with LACP IEEE 802.3u for 100BASE-TX, 100BASE-FX Fast Ethernet IEEE 802.3z for Gigabit Ethernet 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

Features and Benefits

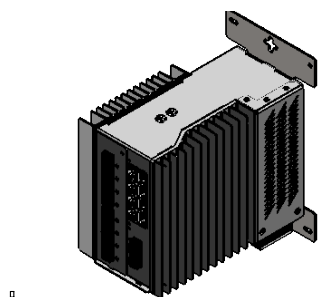
TECHNOLOGY		
ROUTING (LAYER 3)	Static Routing OSPF v2, v3 RIPv2 & VRRP	
PROTOCOL HANDLING	Transparent tunneling of serial streams SCADA gateway for IEC101/104, ModBus RTU/TCP and DNP3 RTU/TCP Terminal Server Byte / Frame mode	
PERFORMANCE	Line Rate L2/L3 Switching Throughput Switching Latency <10µSec 16K MAC Addresses 4K VLANs L2 Multicast IGMP Snooping for Traffic Optimization	
SECURITY FEATURES	Authentication Proxy access (APA)	L2 and L3 authentication SSH authentication OpenVPN authentication APA rules sublet based APA Static user table support
	Event Logger	A proxy for syslog clients
	DPI Firewall	Profile Based and with security rules planning per service group Monitoring, Enforcement, and Learning Modes IEC 101/104 Modbus RTU DPI Firewall, TCP Firewall DNP3 RTU Firewall, TCP Firewall S7 RTU Firewall, TCP Firewall
	VPN	IPsec Certificates X.509 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
	Access control	Enable/disable port IEEE 802.1x port-based authentication User activity report (under local APA) Access Lists L2, L3, L4 NAT traversal
LOCAL OPERATION	RS-232 console port Remote CLI access using SSH tunnel Local USB port for emergency boot (or backup) Discrete outputs reporting system alarms Backup / Restore running config Conditioned /scheduled system reboot Remote management and upgrade FTP / SFTP Client Safe Mode Syslog SNMP v 1/v2C/v3	

Features and Benefits

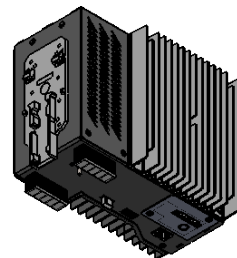
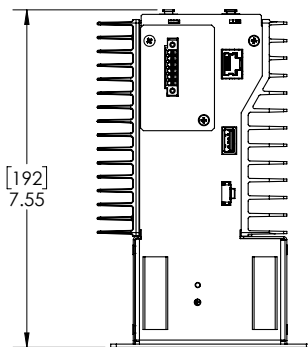
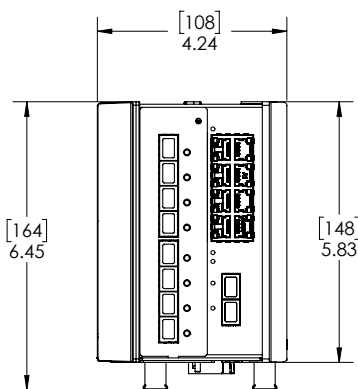
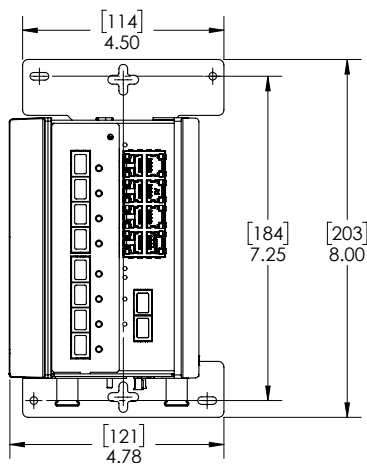
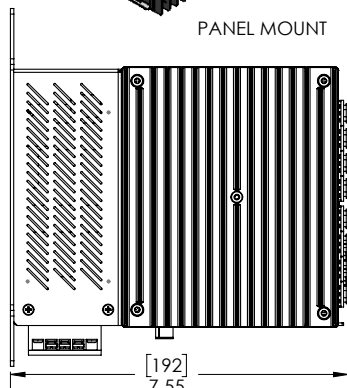
POWER	
INPUT POWER	Dual DC inputs 9 to 36VDC, Dual DC Inputs 36-75VDC, or Dual input universal supply 110-370VDC or 90-264VAC 50/60Hz Input for PoE 90-250VAC
PHYSICAL CHARACTERISTICS	
ENCLOSURE	IP-40 Galvanized Steel
DIMENSIONS (W X D X H)	108 x 192x 164 mm (4.24" x 7.55" x 6.45") 8RJ45-2GSFP-4SFP-4SFP (no bracket)
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, (extendable option with additional terms)

Dimensions

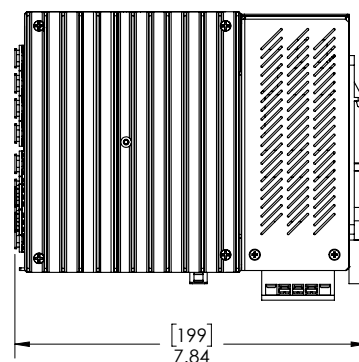
All dimensions are shown in inches [millimeters].



PANEL MOUNT



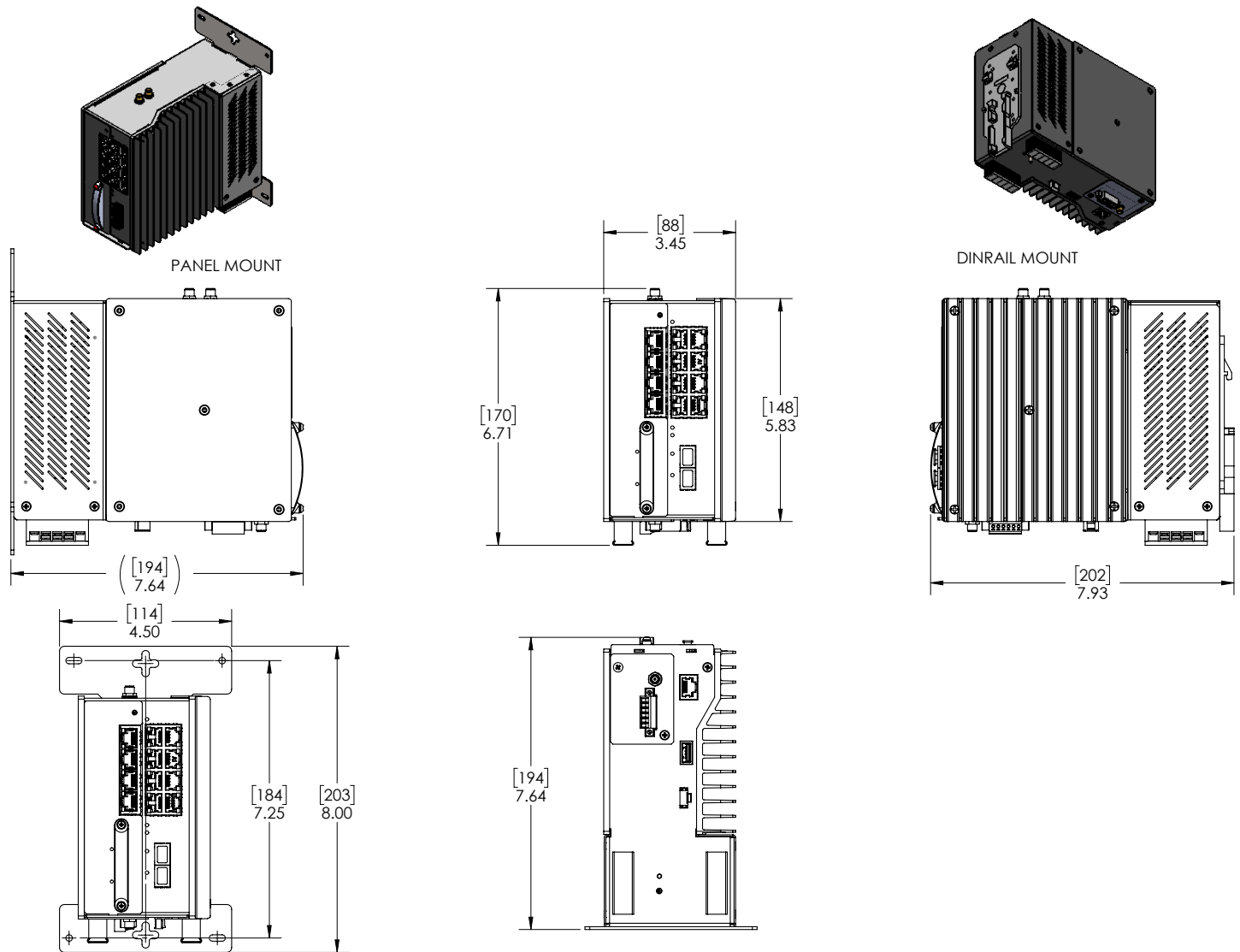
DINRAIL MOUNT



VERSION 8RJ45-2GSFP-4SFP-4SFP SHOWN (POPULATED WITH OPTION 1 AND OPTION 2)

Dimensions

All dimensions are shown in inches [millimeters].



VERSION 8RJ45-2GSFP-4SRJ45-2SIM-LTE1 SHOWN (POPULATED WITH OPTION 1 AND CELLULAR PORT)

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	MOD	DESCRIPTION
iSG18GFP	HV	HV	D	8RJ45	2GSFP	4SFP	4SFP	XX	SE		
iSG18GFP											Core assembly and packaging
		XX									None
	LV	LV									Input 9-36VDC
	MV	MV									Input 36-75VDC
	HV	HV									Input 110-370VDC 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 fall-back, International
								2SIM-LTE2			Dual SIM LTE Modem with 3G fall-back, Americas (AT&T, Generic)*
								2SIM-LTE3			Dual SIM LTE Modem with 3G fall-back, Americas (Verizon)
								2SIM-LTE4			Dual SIM LTE Modem with 3G fall-back, Americas (Sprint)
								2SIM-LTE5			Dual SIM LTE Modem with 3G fall-back, Americas (Bell, Rogers, Telus)
									SE		Security Enhanced License *****-APA/Firewall/X.509 certs/Event Logger
										C1	Conformal Coating

* 2SIM-LTE2 option can support Verizon and AT&T simultaneously.

** SFPs sold separately.

*** PoE Ports only supported with HV and MV power supplies. PoE cannot be selected with LTE. Power Supply 2 not available with PoE.

**** Cellular options not available with Option 2 populated. Port types cannot be mixed between Option 1 and Option 2.

***** To include a cellular option in an order, from Option 1, choose 4SRJ45 (see version 8RJ45-2GSFP-4SRJ45-2SIM-LTE1 shown on page 6)

***** To have APA/Firewall/X.509 certs/Event Logger in your package, SE option must be ordered.

iSG18GFP Sample Order Code

iSG18GFP-HV-HV-D-8RJ45-2GSFP-4SFP-4SFP-XX-SE

Description: 18 Port Secure Gateway/Switch, (Power Supply 1) Input 110-370VDC or 90-264VAC, (Power Supply 2) Input 110-370VDC 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.

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

iSG18GFP-HV-HV-D-8RJ45-2GSFP-4SFP-4SFP-XX-SE-C1

Description: 18 Port Secure Gateway/Switch, (Power Supply 1) Input 110-370VDC or 90-264VAC, (Power Supply 2) Input 110-370VDC 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. This system will be conformal coated.

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
SFP100-SM-80-SG	SFP 100Mbps Singlemode LC Transceiver 80km, 1550nm, -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
SFP1000-SM-80-SG	SFP 1Gbps Singlemode LC Transceiver 80km, 1550nm, -40°C to +85°C
SFP-SGMI-TX-SG	SFP 10/100/1000Mbps TX RJ45, SGMII Transceiver 100m, -40°C to +85°C



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