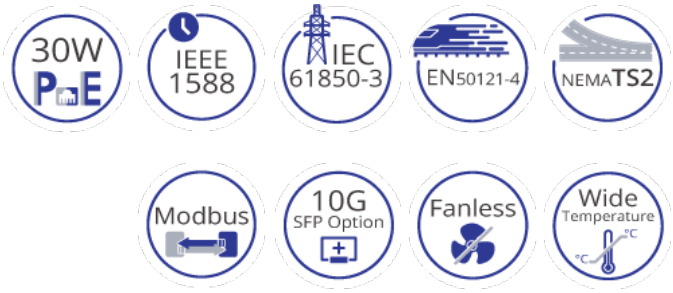
IG5 SV Series

IEC 61850-3/IEEE 1613 Hardened Managed 24-port Gigabit (8*PoE) and 4-port 1G/10G SFP+ Ethernet PoE Switch



Overview

When should you use an Industrial Layer 3 switch?

EtherWAN's IG5 SV switches have been enhanced for better performance and retain the original versatile port combination of the IG5 series. New options include 8 IEEE 802.3af/at PoE ports combined with either 16 TX ports or 8 TX ports, providing more flexible network applications. These models deliver up to 30 watts per port and built-in intelligent controller optimizes real-time allocation of 90w total power budget, making ideal for applications requiring high power safety protection and integrated network power configuration.

With a minimum input voltage of 24VDC, rugged IP40 metal casing protection combined with a more compact body size offers better flexibility for installation in spaces with limited depth. Rich Layer 2 and Layer 3 management functionalities, featuring equipped digital I/O and relay control ports, expanding for detection and alarm systems, enable diverse network construction.

All models meet the IEC 61850-90-4 GOOSE message transmission requirements and the IEEE 1588v2 Precision Time Protocol (PTP) for network time synchronization, ensure rapid response and high reliability of the power system. With 10G bandwidth, IEEE 802.3at type 2 compatibility, and compliance with IEC 61850-3 ,IEEE 1613, and IEC 60255- 27 with up to 5kV Impulse protection. The IG5 SV is an ideal choice for critical mission applications such as urban infrastructure, intelligent transportation, industrial IoT, and smart energy network management.

EtherWAN — "**When Connectivity is Crucial.**"

Highlights

High Bandwidth and Versatility

24 full gigabit port with multiple configurations
4 1G/10G SFP+ uplink ports
Sufficient switching capacity at 128Gbp
DnA solutions for Digital I/O & Relay control

PoE Features

8-port IEEE 802.3 af/at PSE with 90W total power budget
PoE watchdog monitors status of connected PD devices

Layer 3 Functionality

Static routing, RIP v1/v2, and OSPF
Redundancy with VRRPv2

Flexible Installation

Support Rack and Panel mount installation
Concise communication status display
Considerable ease of cabling management

Substation communication and time synchronization

Complies with IEC61850-90-4 GOOSE and multicast message transmission
IEEE 1588v2 Available in all ports
Support One-Step and Two-Step delay measurement mechanism
Operation as transparent clock

Designed for Crucial Environments

Wide Operation Temperature range from -40 to 75°C(-40 to 167°F)
Thermal shock and electrical noise resistance

Features

Interface

CLI, Telnet, Web GUI

Management

Firmware Upgrade
Configuration Backup
DHCP Server/Client
RMON (Remote Monitoring)
Port Mirroring
NTP (Network Time Protocol) Synchronization
LLDP (Link Layer Discovery Protocol)
IPv4/IPv6
SNMP v1/v2c/v3
Modbus

Security

MAC Address Filtering
Enable/Disable Port
Storm Control
System Logging
IEEE 802.1x LAN Access Control
Remote Authentication through RADIUS and TACACS+
Complex Password Support
Multi-user Login and Privileged Access Management
SSH for CLI and Telnet Security
SSL and HTTPS for Web Security
ACL (Access Control List, up to 4096 Entries)
IPSG (IP Source guard)
DAI (Dynamic ARP Inspection)
DHCP Snooping

Layer 2 Features

Auto-negotiation for Port Speed and Duplex
Flow Control
IEEE 802.3x full duplex mode
Back-pressure half duplex mode

Redundant Protocols
IEEE 802.1D STP
IEEE 802.1w RSTP
IEEE 802.1s MSTP
EtherWAN's Alpha-Ring network fault recovery

VLANs
IEEE 802.1Q Tag VLANs
GVRP
GMRP

Link Aggregation
Static Trunk (4 groups)
IEEE 802.3ad LACP

IGMP Snooping v1/v2/v3

Layer 3 Features

IP Packet Routing
Maximum number of routes in hardware: 512 entries
Static Routing
RIP v1/v2
OSPF v2

Routing Redundancy
VRRPv2

Quality of Service (QoS)

Priority Queues: 8 Queues Per Port

Traffic Classification Based on IEEE 802.1p CoS (Cost of Service), DSCP (Differentiated Services Code Point), WRR (Weighted Round Robin), and Strict Mode

Rate Limiting (Ingress/Egress)

Software Properties and Performance

Switching Fabric
128Gbps

Forwarding Rate
95.23Mpps

Max VLANs
256 (4096 VID)

Jumbo Frame Size
9KB

MAC Table Size
16K

Packet Buffer Memory
12M bits

Specifications

Interface

Ethernet
10/100/1000BASE-T(X) PoE: 8 ports (PoE models)
10/100/1000BASE-T(X): 0, 8, 16 or 24 ports
100/1000BASE SFP: 0, 8, 16 or 24 ports
1G/10G SFP+: 4 ports

Console
1 x RJ45

Config Backup
1 x USB (Type A Connector)

Digital Input
2 x Digital Input
Wet Contact: 0-3V for State 0; 13-30V for State 1; Max input current: 8mA
Dry Contact: Logic Level 1–Close to GND; Logic Level 0-Open

Alarm Contact
2 x Relay output, current capacity 0.5A/48VDC

LED Indicators
Per Unit: Power 1, Power 2 (Green)
Link/Activity (Green)
Per Port:Alarm (Red)
PoE Port: PoE Status (Green)

Physical

Casing Material
Metal

IP Rating
IP40

Dimensions
442 x 267 x 44mm (W x D x H)
17.4" x 10.5" x 1.73"

Weight
4.6kg (10.14lbs) / 4.0kg (8.82lbs)

Installation Type
Rack mounting / Panel mounting

Environmental

Operating Temp.
-40 to 75°C (-40 to 167°F)
(-40°C to 85°C for IEC 60068-2-2 Environmental 16 hours)

Storage Temp.
-45 to 85°C (-49 to 185°F)

Relative Humidity
5% to 95% (non-condensing)

MTBF
790,907 hours

Technology

Standards
IEEE 802.3 10BASE-T
IEEE 802.3u 100BASE-TX/100BASE-FX
IEEE 802.3ab 1000BASE-T
IEEE 802.3ae 10Gigabit Ethernet
IEEE 802.3ad link aggregation control
IEEE 802.3z 1000BASE-SX/1000BASE-LX
IEEE 802.1D STP
IEEE 802.1p QoS
IEEE 802.1Q Tag VLANs
IEEE 802.1s MSTP
IEEE 802.1w RSTP
IEEE 802.1x PNAC
IEEE 802.1ab LLDP

Forward/Filtering Rate
14,880pps for 10Mbps
148,810pps for 100Mbps
1,488,100pps for 1000Mbps
14,881,000pps for 10Gbps

Processing Type
Store-and-forward
Auto-negotiation
Half-duplex back-pressure and full-duplex flow control
Auto MDI/MDIX

System Memory
2Gb DDR3 SDRAM

Flash Storage
1Gb

Regulatory

ISO
Manufactured in ISO-9001 facility

EMI
FCC Part 15B Class A
VCCI Class A
EN 61000-6-4
BSMI

EMS
EN 61000-6-2
EN 61000-4-2 (ESD)
EN 61000-4-3 (Radiated RFI)
EN 61000-4-4 (Burst)
EN 61000-4-5 (Surge)
EN 61000-4-6 (Induced RFI)
EN 61000-4-8 (Magnetic field)

Safety
UL 62368-1

Vibration
IEC 60068-2-6

Shock
IEC 60068-2-27

Free Fall
IEC 60068-2-31

Industrial
EN 50121-4

Power Substation
IEC 61850-3/IEEE 1613/IEC 60255-27
IEC 61850-90-4

Power

Input
24VDC to 48VDC (Nominal)
18 - 60VDC (Operational)
Redundant Power Inputs (Terminal Block)

Power Consumption
50W max. (Without PoE)

Protection
Reverse Polarity Protection
Overload Current Protection

PoE (Available for PoE models)
PoE Modes
- 802.3af/at Mode A: Pins 1/2(-), 3/6(+)

Power Output
- Ports 1-8: 15W Up to 30W/port
- Total Power Budget: 90W

Complience
- IEEE 802.3af type 1, ≤15.4W PD devices
- IEEE 802.3at type 2, 30W PD devices.

Warranty

Length
Limited Lifetime

Details
www.etherwan.com/support/warranty-policy

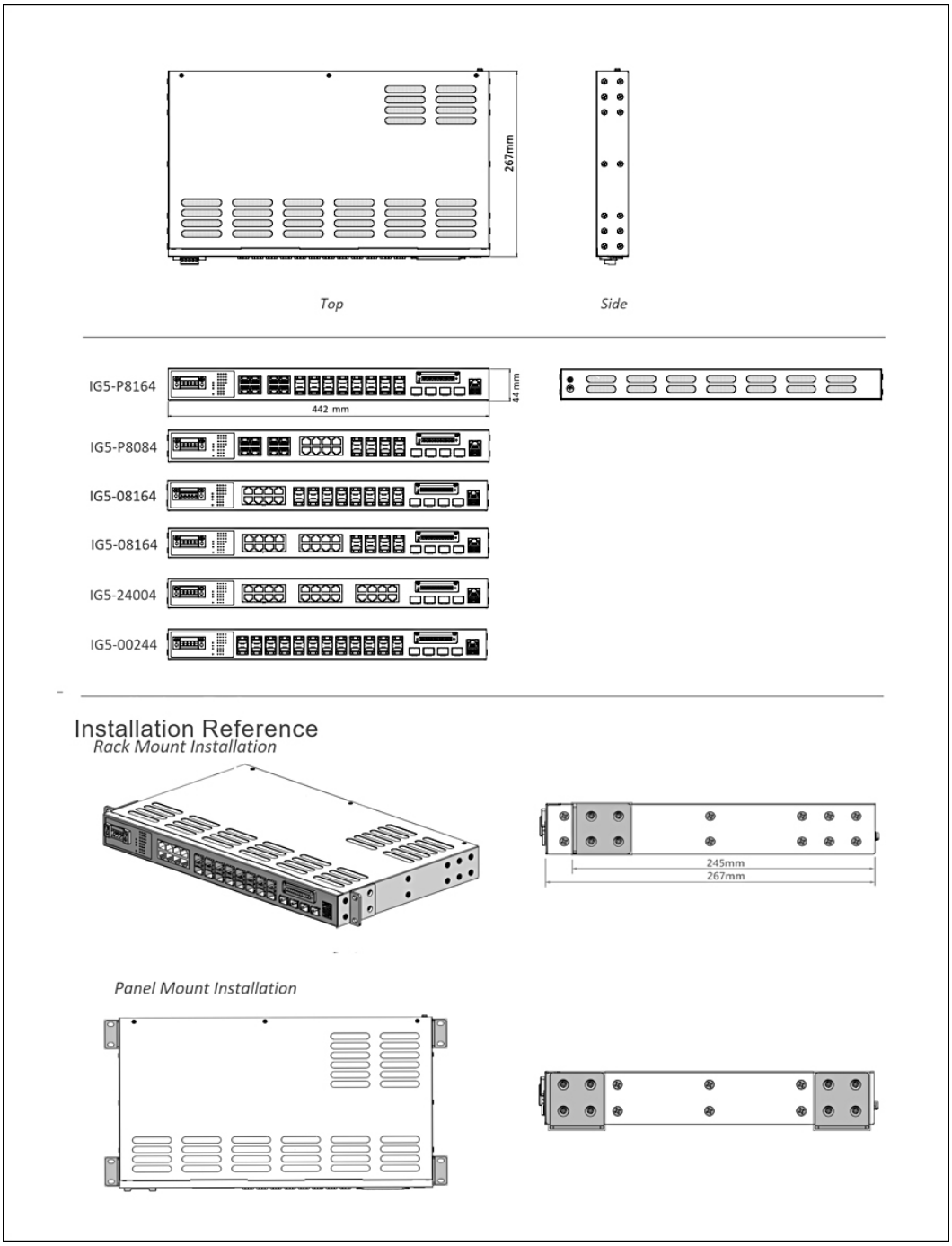
What's Included

Device
Ethernet Switch

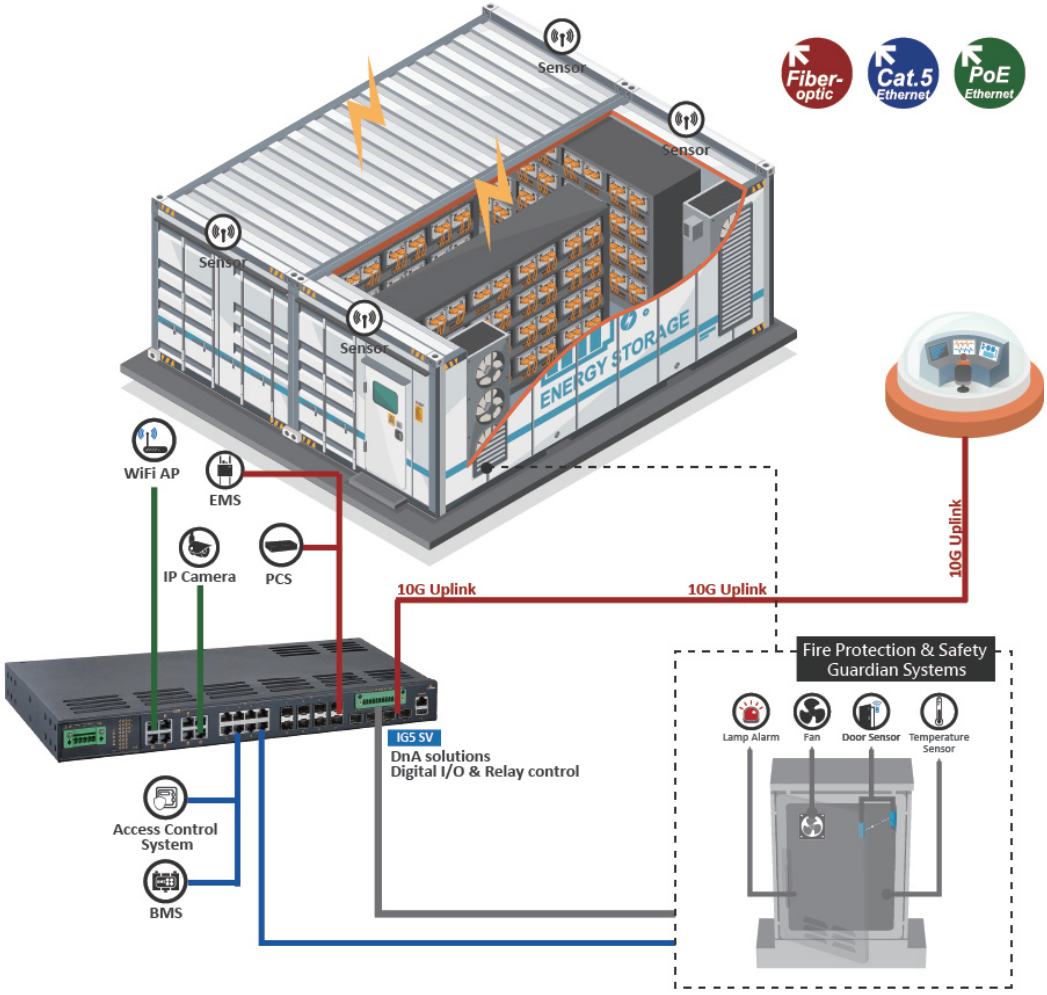
Cables
1 Console Cable

Installation
Mounting brackets, screws

Dimensions

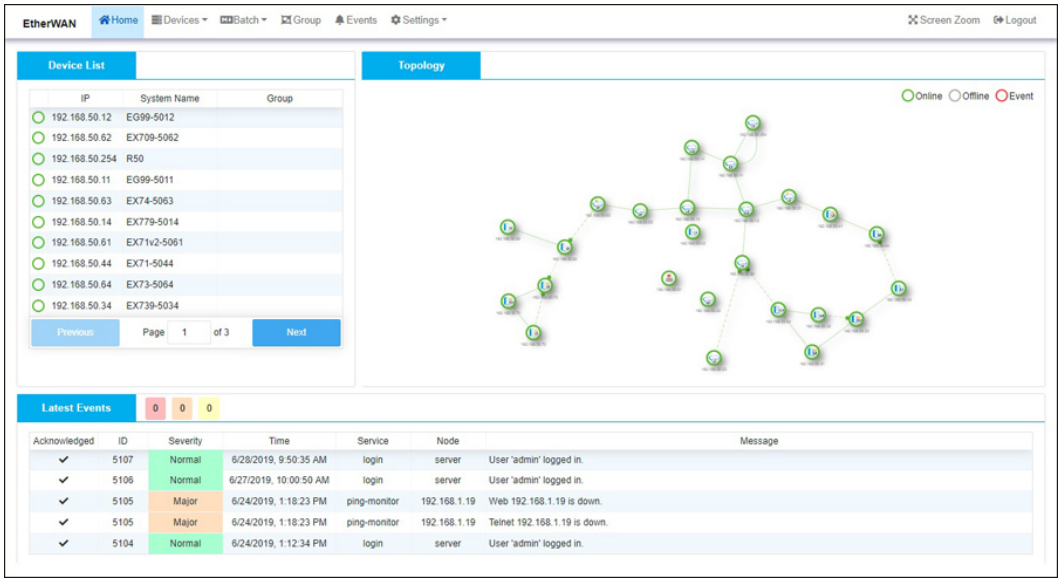

267mm
Top
Side
IG5-P8164
442 mm
44 mm
IG5-P8084
IG5-08164
IG5-08164
IG5-24004
IG5-00244
Installation Reference
Rack Mount Installation
245mm
267mm
Panel Mount Installation

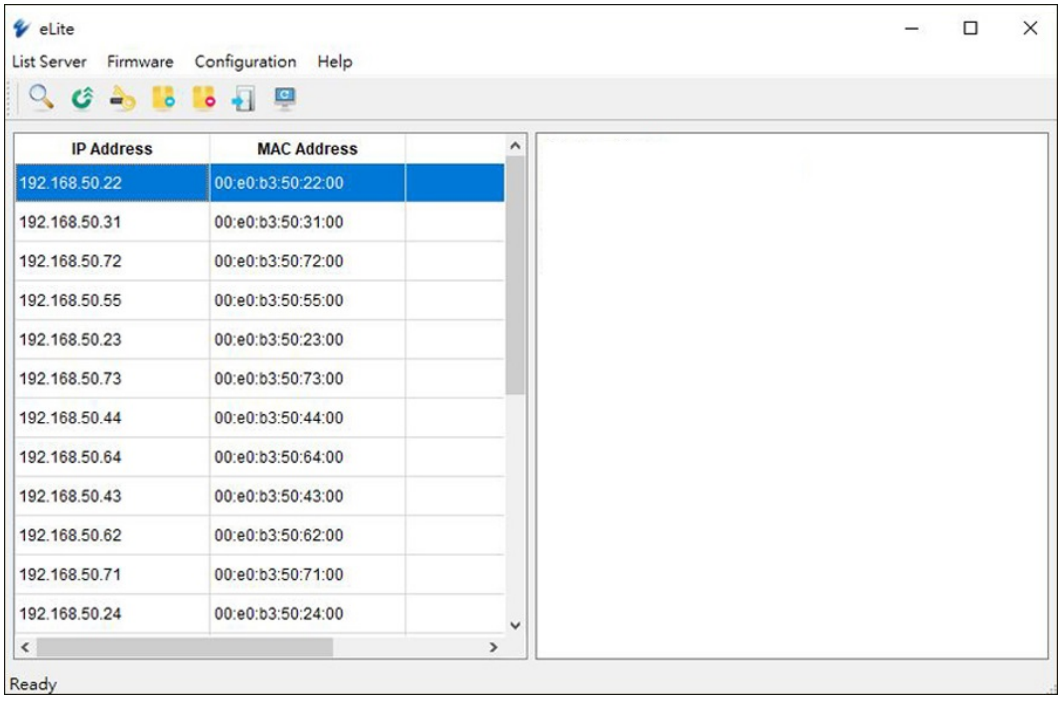
Application



Software

Network Management	eVue™ Network Configuration and Monitoring Tool
Network Discovery	eLite™ Network Discovery and IP Configuration Tool





Ordering Info

PoE Models

IG5-P8084FTE	8-port 10/100/1000BASE-T(X) PoE + 8-port 10/100/1000BASE-T(X) + 8-port 100/1000BASE SFP + 4-port 1G/10G SFP+ Managed Ethernet Switch
IG5-P8164FTE	8-port 10/100/1000BASE-T(X) PoE + 16-port 100/1000BASE SFP + 4-port 1G/10G SFP+ Managed Ethernet Switch

Non-PoE Models

IG5-24004FTE	24-port 10/100/1000BASE-T(X) + 4-port 1G/10G SFP+ Managed Ethernet Switch
IG5-16084FTE	16-port 10/100/1000BASE-T(X) + 8-port 100/1000BASE SFP + 4-port 1G/10G SFP+ Managed Ethernet Switch
IG5-08164FTE	8-port 10/100/1000BASE-T(X) + 16-port 100/1000BASE SFP + 4-port 1G/10G SFP+ Managed Ethernet Switch
IG5-00244FTE	24-port 100/1000BASE SFP + 4-port 1G/10G SFP+ Managed Ethernet Switch

Accessories

Part Number	Speed Info	Mode	Distance	Operating Temperature	Wavelength	DDM
EX-0155NSP-MB2L-A	100Mbps	Multi	2km	-40 to 85°C	1310nm	-
SFPMIS20M	100Mbps	Single	20km	-40 to 85°C	1310nm	✔
SFPGIM5AM	1000Mbps	Multi	275m/550m	-40 to 85°C	850nm	✔
SFPGIM02M	1000Mbps	Multi	2km	-40 to 85°C	1310nm	✔
SFPGIS10M	1000Mbps	Single	10km	-40 to 85°C	1310nm	✔
SFPTIM3AM	10Gbps	Multi	300m	-40 to 85°C	850nm	✔
SFPTIM3AM	10Gbps	Single	10km	-40 to 85°C	1310nm	✔

For more SFP, please visit website:

Hardened 100BASE SFP Modules	www.etherwan.com/products/sfp-fiber-transceiver
Hardened Gigabit SFP Modules	www.etherwan.com/products/sfp-fiber-transceiver
Hardened 10G SFP+ Modules	www.etherwan.com/products/sfp-fiber-transceiver
DIN-Rail Power Supplies	www.etherwan.com/products/din-rail-power-supply

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