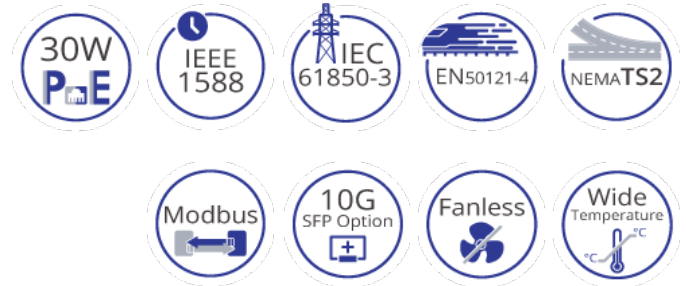


IG5 SV シリーズ

IEC 61850-3/IEEE 1613 産業用マネジード 24 ポート Gigabit (8*PoE) + 4 ポート 1G/10G SFP+ イーサネットスイッチ



概要

EtherWANのIG5 SV産業用ネットワークスイッチは既存のIG5 Rackシリーズの高信頼性を基礎にさらにアップグレードされました。より優れた性能を発揮し、既存の豊富なポート構成を継承しつつ、16ポートと8ポートの銅線組み合わせに、8つのIEEE 802.3af/at PoEポートを備えた新モデルを追加しました。各ポートで最大30Wの出力を提供し、スマートコントローラーを使用して90Wの出力を最も効率的にリアルタイムで配分します。特に高電磁安全保護と統合ネットワーク電力配置が必要なアプリケーションに適しています。

24~48VDCの入力電圧、強固なIP40金属ケース保護とよりコンパクトな筐体サイズにより、深さが限られたスペースでの設置に柔軟性を提供します。豊富な第二層管理機能を備え、L3ルーティング設定をサポートし、大規模ネットワーク環境での効率的なデータ伝送を満たします。内蔵のデジタルI/Oとリレー制御ポートにより、検出および警報システムを拡張し、多様で柔軟なネットワーク構築を実現します。

すべてのモデルはIEC 61850-90-4 GOOSEメッセージ伝送要件およびIEEE 1588v2精密時間プロトコル (PTP) によるネットワーク時間同期に準拠しており、電力システムの迅速な応答と高信頼性を確保します。IG5 SVは10G帯域幅、IEEE 802.3at type 2互換性を備え、IEC 61850-3、IEEE 1613およびIEC 60255-27標準に準拠し、最大5kVのパルス保護を提供します。都市インフラ、スマート交通、産業IoTおよびスマートエネルギー管理などの重要なミッションアプリケーションに最適な選択肢です。

EtherWAN — "When Connectivity is Crucial."

特長

+ 高帯域幅と多インターフェース構成

24ポートのフルギガビット高帯域幅接続
4つの独立したSFP+ポートが1G/10G光ファイバー接続をサポート
スイッチング容量128Gbps
内蔵デジタルI/O制御ポートで検出およびアラームシステムに接続

+ PoE機能

8つのIEEE 802.3 af/at type 2 PoEポートを提供
PoEウォッチドッグ (PoE Watchdog) 監視機能をサポート

+ L3 ネットワーク管理機能

スタティックルーティング、RIP v1/v2、およびOSPF
VRRP仮想ルーター冗長プロトコル

+ 柔軟な設置

ラックマウントおよびパネルマウント設置をサポート
統合通信ステータスパネル
ケーブル管理が容易

+ 変電所通信伝送と時間同期をサポート

IEC61850-90-4 GOOSEおよびマルチキャストメッセージ伝送に準拠
すべてのポートがIEEE 1588v2 PTPプロトコルをサポート
One-StepおよびTwo-Stepの対等遅延測定メカニズムをサポート
トランスペアレントクロックのブリッジデバイスとして動作可能

+ 過酷な環境に適した堅牢な設計-40~75°C (-40~167°F)

広い動作温度範囲での操作はIEC60068-2-2環境テストに準拠
高温衝撃および高ノイズ耐性はIEC 61850-3およびIEEE 1613標準テストに合格
IEC 60255-27電気保護安全テストに合格

機能

+ 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

仕様

+ 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

Compliance

- 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

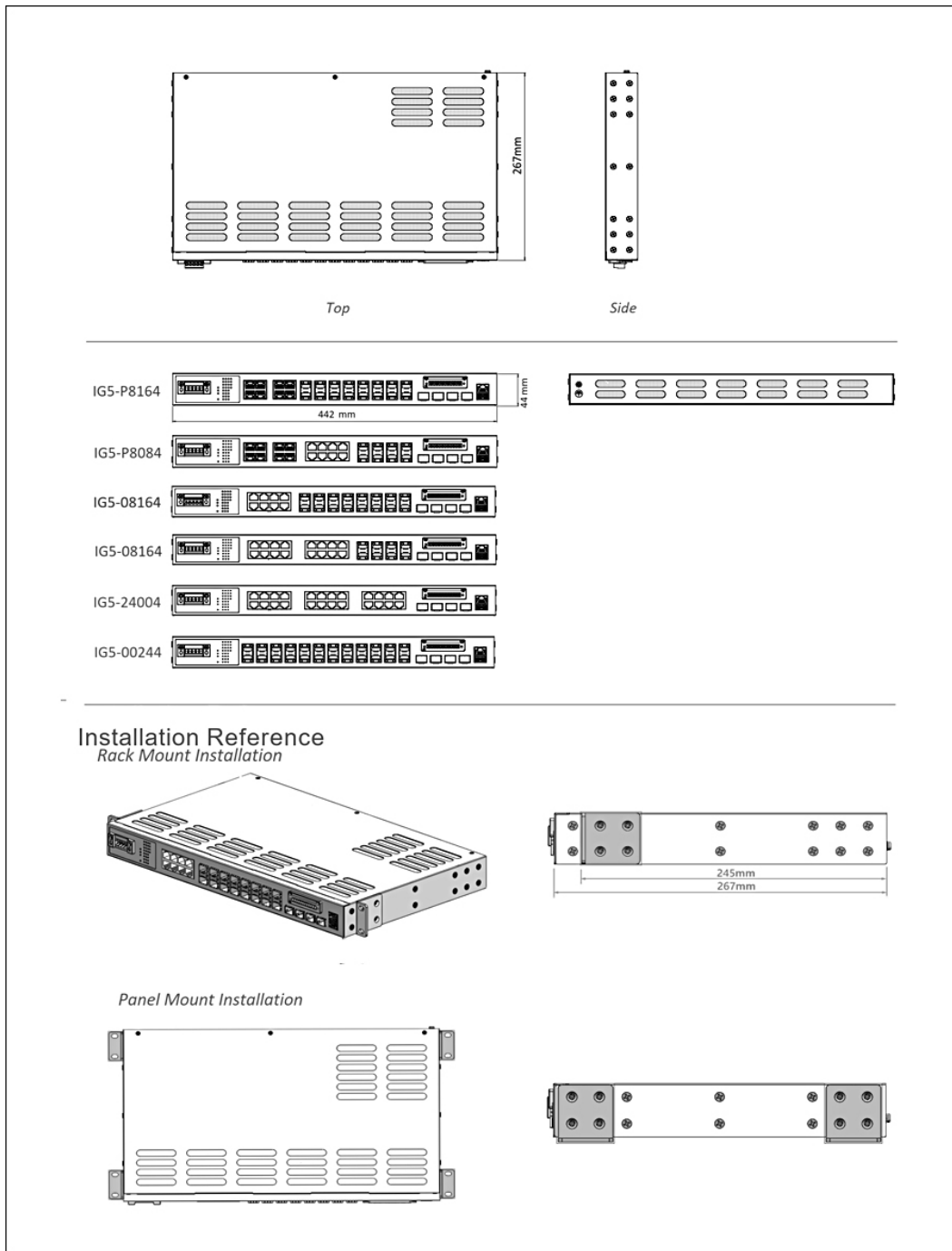
Cables

1 Console Cable

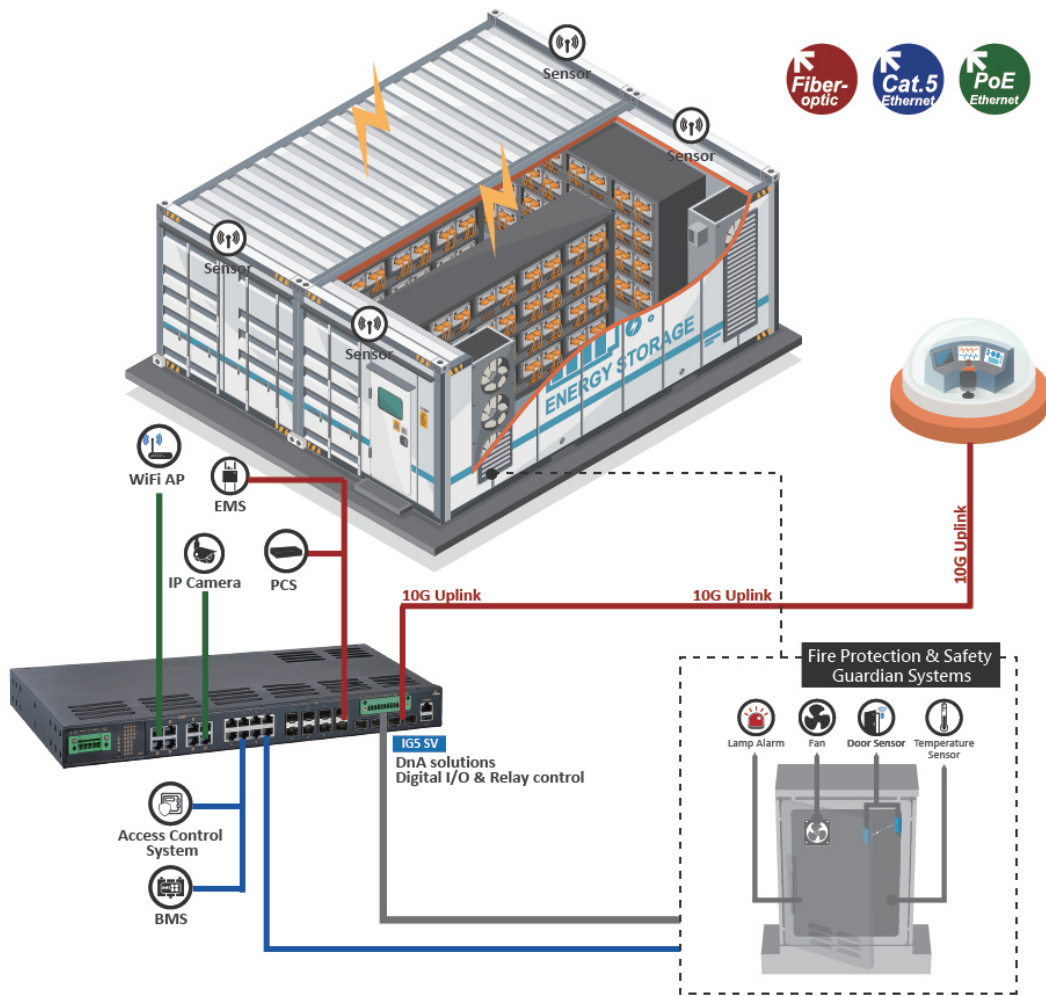
Installation

Mounting brackets, screws

寸法図

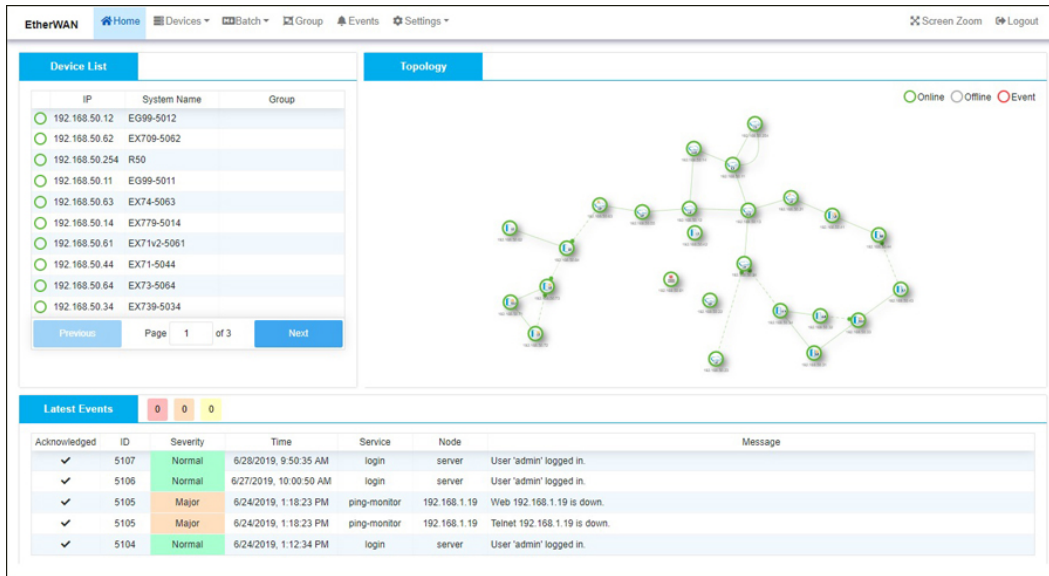


応用例



ソフトウェア

- [Network Management](#) [eVue™ Network Configuration and Monitoring Tool](#)
- [Network Discovery](#) [eLite™ Network Discovery and IP Configuration Tool](#)



The screenshot shows the EtherWAN web interface. At the top, there are navigation tabs: Home, Devices, Batch, Group, Events, and Settings. The main content area is divided into two sections: 'Device List' and 'Topology'.

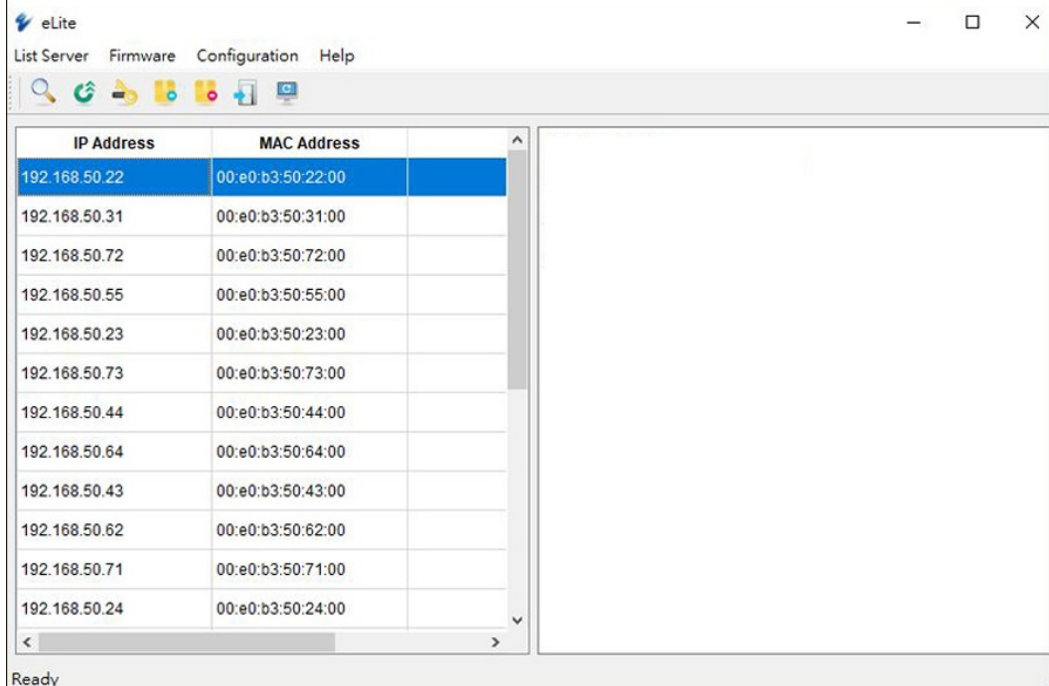
Device List: A table with columns for IP, System Name, and Group. It lists 13 devices with their respective IP addresses and system names.

IP	System Name	Group
192.168.50.12	EG99-5012	
192.168.50.62	EX709-5062	
192.168.50.254	R50	
192.168.50.11	EG99-5011	
192.168.50.63	EX74-5063	
192.168.50.14	EX779-5014	
192.168.50.61	EX71v2-5061	
192.168.50.44	EX71-5044	
192.168.50.64	EX73-5064	
192.168.50.34	EX739-5034	

Topology: A network diagram showing various nodes connected in a mesh-like structure. A legend indicates Online (green circle), Offline (grey circle), and Event (red circle).

Latest Events: A table showing recent events with columns for Acknowledged, ID, Severity, Time, Service, Node, and Message.

Acknowledged	ID	Severity	Time	Service	Node	Message
✓	5107	Normal	6/28/2019, 9:50:35 AM	login	server	User 'admin' logged in.
✓	5106	Normal	6/27/2019, 10:00:50 AM	login	server	User 'admin' logged in.
✓	5105	Major	6/24/2019, 1:18:23 PM	ping-monitor	192.168.1.19	Web 192.168.1.19 is down.
✓	5105	Major	6/24/2019, 1:18:23 PM	ping-monitor	192.168.1.19	Teinet 192.168.1.19 is down.
✓	5104	Normal	6/24/2019, 1:12:34 PM	login	server	User 'admin' logged in.



The screenshot shows the eLite web interface. At the top, there are navigation tabs: List Server, Firmware, Configuration, and Help. Below the tabs is a toolbar with various icons. The main content area is a table with columns for IP Address and MAC Address.

IP Address	MAC Address
192.168.50.22	00:e0:b3:50:22:00
192.168.50.31	00:e0:b3:50:31:00
192.168.50.72	00:e0:b3:50:72:00
192.168.50.55	00:e0:b3:50:55:00
192.168.50.23	00:e0:b3:50:23:00
192.168.50.73	00:e0:b3:50:73:00
192.168.50.44	00:e0:b3:50:44:00
192.168.50.64	00:e0:b3:50:64:00
192.168.50.43	00:e0:b3:50:43:00
192.168.50.62	00:e0:b3:50:62:00
192.168.50.71	00:e0:b3:50:71:00
192.168.50.24	00:e0:b3:50:24:00

At the bottom of the interface, the status 'Ready' is displayed.

製品型番

+ 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/jp/products/sfp-fiber-transceiver
DIN-Rail Power Supplies	www.etherwan.com/jp/products/din-rail-power-supply

