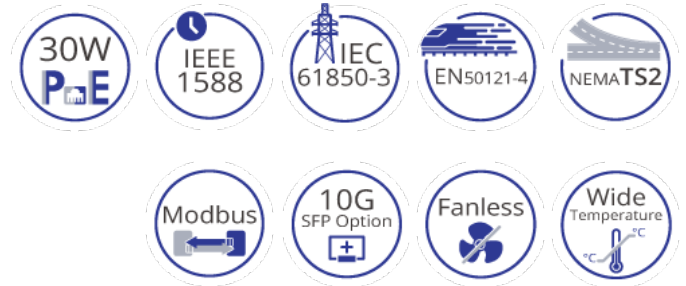


IG5 SV Series

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



Overview

[When should you use an Industrial Layer 3 switch?](#)

EtherWAN's IG5 SV switches are further upgraded based on the high reliability of the original IG5 Rack series. Better performance inherits the original combination, and adds two new configurations with 8 IEEE 802.3af/at PoE ports to the selection of 16 TX and 8 TX ports. These models deliver up to 30 watts per port and are 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 type2 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
- Reduces amount of broadcast traffic

+ 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)
- Free firmware upgrades and notifications
- 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: 64 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)

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

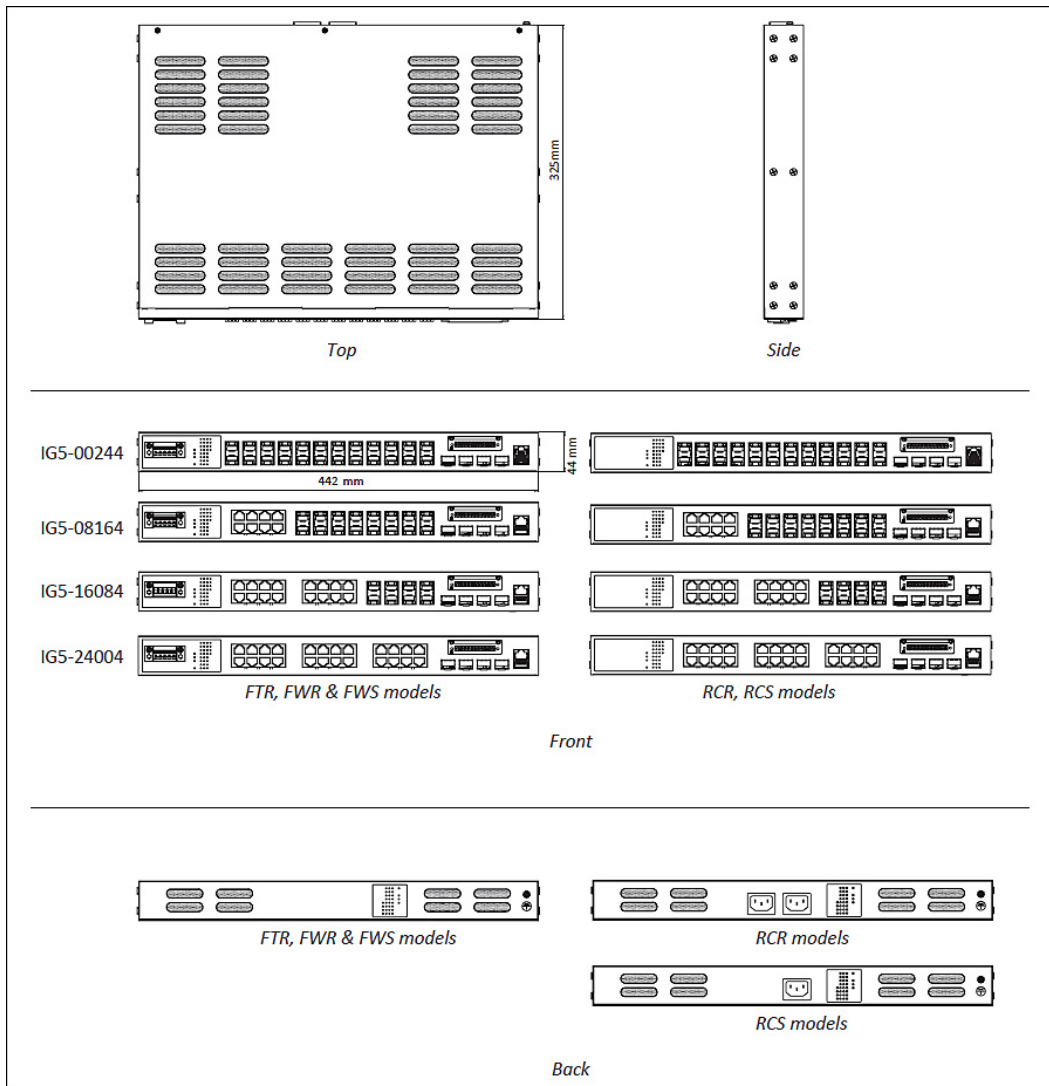
Cables

1 Console Cable

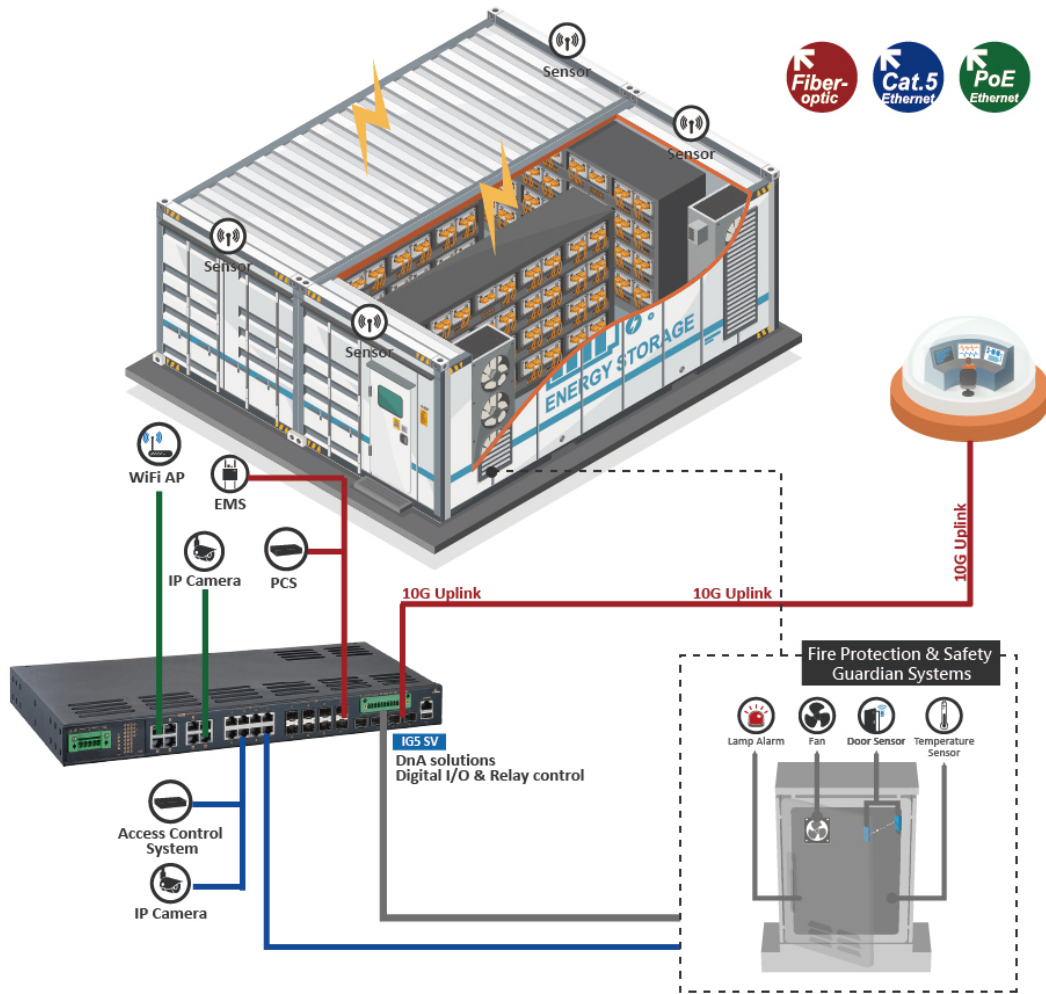
Installation

Mounting brackets, screws

Dimensions



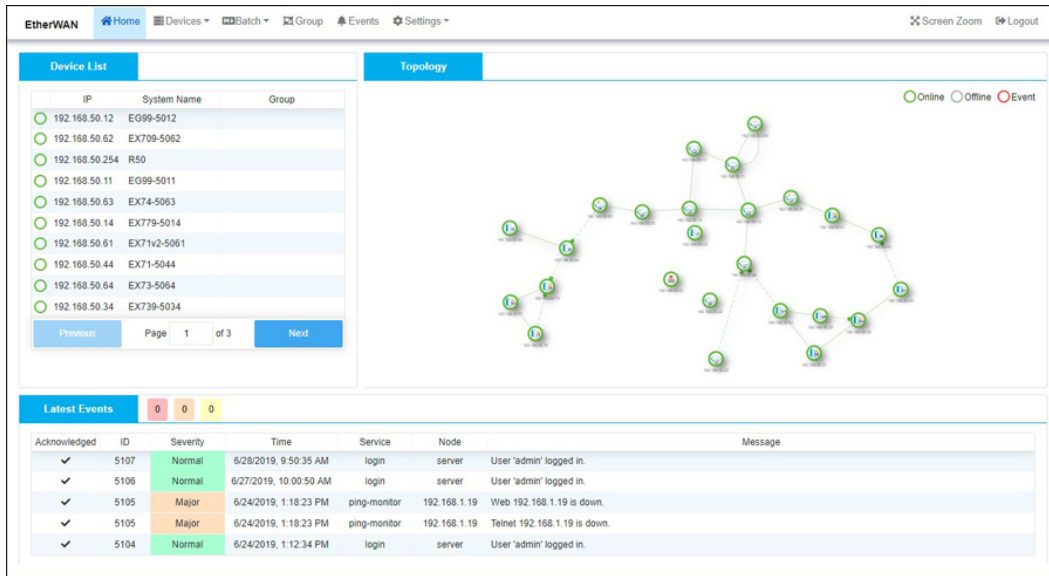
Application



Software

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'.

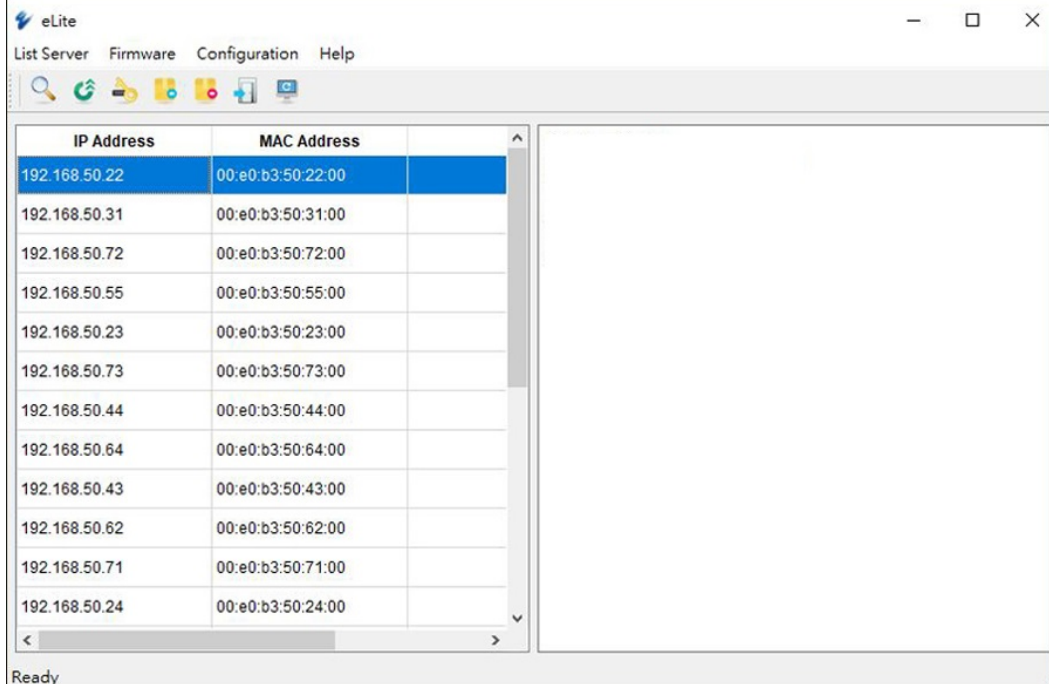
Device List:

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:

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 application window. The title bar reads 'eLite'. The menu bar includes 'List Server', 'Firmware', 'Configuration', and 'Help'. Below the menu bar is a toolbar with several icons. The main content area is a table with two columns: '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

The status bar at the bottom left shows 'Ready'.

Ordering Info

+ PoE Models

IG5-P8084YYY	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-P8164YYY	8-port 10/100/1000BASE-T(X) PoE + 16-port 100/1000BASE SFP + 4-port 1G/10G SFP+ Managed Ethernet Switch

+ Non-PoE Models

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

+ Power Input & Operation Temp. (YYY)

FTE	24VDC to 48VDC Dual Power Input (Terminal Block), Hardened Grade (-40 to 75°C)
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+ 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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