

# SWM-H-24TGX-4SFPP

## L3 HARDENED MANAGED 24G 4\*10G



### L3

Routing

### SFP

8 \* Giga Combo

### HIGH SPEED

4 \* 10G

### WIDE TEMP

-40°C to +75°C

### RUGGEDIZED

Fanless

### REDUNDANT

Dual 48V  
or  
Dual AC

## Overview

**SWM-H-24TGX-4SFPP** Series provides a Hardened Full-Gigabit Managed 28-port switching platform that combines the advantages of Layer 3 routing protocols with robust management features and hardened specifications. With support for static routing, Routing Information Protocol (RIP) V1/V2, and Virtual Router Redundancy Protocol (VRRP), these switches deliver outstanding flexibility and security in a high performance and cost-effective package.

The **SWM-H-24TGX-4SFPP** Series is equipped with 28 gigabit ports, or a combination of 24 Gigabit copper ports and 4 \* 10G SFP+ for connecting the switch to the core network. Mountable on a 1U rack, the switches are equipped with CXR's Alpha-Ring self-healing technology, providing less than 15ms fault recovery time making it ideal for applications intolerant to interruption.

A broad range of management features and options includes port security, IGMP snooping, port-based VLAN, GARP protocols, link aggregation and ACL, via web browser, telnet, SSH, SNMP, RMON, TFTP, and RS-232 console interfaces. With the hardened specifications, the **SWM-H-24TGX-4SFPP** Series is designed to operate at -40°C to 75°C in harsh environments, and is IEC 61850 & IEEE 1613 compliant, capable of operating under high EMI environments, making it an ideal choice for mission-critical applications.

## Applications

The **SWM-H-24TGX-4SFPP** is aimed at serving many applications such as

- Utility and Transportation networks for Ethernet services
- Wide operating temperature range for extreme environments
- High speed 10 GbE connectivity
- Layer 3 routing features



# Software Features

## Management

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Interface  
CLI, Telnet and Web Browser  
SNMP v1/v2c/v3  
Firmware and configuration upgrade and backup via TFTP  
Supports DHCP Server/Client  
RMON (Remote monitoring)  
Port mirroring: TX/RX and both  
NTP (Network Time Protocol) time synchronization  
IEEE802.1ab LLDP (Link Layer Discovery Protocol)

## Security

MAC address filtering  
Enable/disable port  
Storm control (broadcast and multicast types)  
IEEE802.1x LAN access control  
Remote authentication through RADIUS  
SSH for CLI and Telnet security  
SSL for web security  
ACL

## Quality of Service (QoS)

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Priority Queues: 4 queues per port  
Traffic classification based on IEEE802.1p CoS, DSCP, WRR (Weighted round robin) and strict mode  
Rate Limiting (Ingress/Egress)

## Layer 2 Features

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Auto-negotiation for port speed and duplex mode  
Flow Control  
IEEE802.3x full duplex mode  
Back-Pressure half duplex mode  
Redundant Protocol  
IEEE802.1D Spanning Tree Protocol (STP)  
IEEE802.1w Rapid Spanning Tree Protocol (RSTP)  
IEEE802.1s Multiple Spanning Tree Protocol (MSTP)  
EtherWAN's Alpha-Ring network fault recovery (<15ms) and Alpha-Chain  
VLANs  
IEEE802.1Q Tag VLANs (128 groups, 4096 VID)  
GVRP (GARP VLAN Registration Protocol)  
GMRP (GARP Multicast Registration Protocol)  
Link Aggregation  
Static Trunk (4 groups, support MAC base)  
IEEE802.3ad Link Aggregation Control Protocol  
IGMP Snooping  
IGMP snooping v1/v2/v3

## Layer 3 Features

IP Packet Routing  
Maximum number of routes in hardware:64 entries  
Static routing  
RIP V1/V2  
Routing Redundancy  
VRRP

# Hardware Specifications

## Technology

### Standards

IEEE802.3 10BASE-T  
 IEEE802.3u 100BASE-TX/100BASE-FX  
 IEEE802.3ab 1000BASE-T  
 IEEE802.3z 1000BASE-SX/1000BASE-LX  
 IEEE802.3x Full duplex and flow control  
 IEEE802.1p QoS  
 IEEE802.1Q Tag VLANs  
 IEEE802.1w RSTP  
 IEEE802.1x Port-based Network Access Control

### Forward and Filtering Rate

14,880pps for 10Mbps  
 148,810pps for 100Mbps  
 • 1,488,100pps for 1000Mbps  
 • 14,880,952pps for 10Gbps

### Packet Buffer Memory

12M bits

### Processing Type

Store-and-Forward  
 Auto-Negotiation  
 Half-duplex back-pressure and IEEE802.3x full-duplex flow control  
 Auto MDI/MDIX

### Address Table Size

16K MAC addresses

## Power

### Input

Power input can be configured as:  
 ± 48VDC (Terminal Block)  
 100–240VAC (Terminal Block)  
 100–240VAC (AC Inlet)  
 ± 48VDC Redundant (Terminal Block)  
 100–240VAC Redundant (Terminal Block)  
 100–240VAC Redundant (AC Inlet)

### Power Consumption

• 31.08W

## Mechanical

### Casing

Metal Case  
 IP30

### Dimensions

• 430 x 375 x 44.2mm (W x D x H)  
 (16.9" x 14.7" x 1.74")

### Weight

• 5.27kg

### Installation

Rack mounting

## Interface

### Ethernet Ports

• 10/100/1000BASE-TX: 24 or 16 ports  
 1000BASE SX/LX/BX/SFP: 8 ports  
 10G SFP+: 4 ports

### Console Port

One DB9 RS-232 port

### USB port

One USB port (Type A connector)

### Alarm Contact

One relay output with current 0.6A/30VDC

### LED Indicators

Per Unit: Power  
 Per Port: Link/Activity (Green)

## Environment

### Operating Temperature

• -40 to 75°C (-40 to 167°F)

### Storage Temperature

• -45 to 85°C (-49 to 185°F)

### Ambient Relative Humidity

5% to 95% (non-condensing)

## Regulatory Approvals

### ISO

Manufactured in an ISO 9001 facility

### EMI

FCC Part 15B, Class A VCCI Class A

EN 61000-6-4

EN 61000-3-2

EN 61000-3-3

### EMS

#### EN 61000-6-2

EN 61000-4-2 (ESD Standards)

EN 61000-4-3 (Radiated RFI Standards)

EN 61000-4-4 (Burst Standards)

EN 61000-4-5 (Surge Standards)

EN 61000-4-6 (Induced RFI Standards)

EN 61000-4-8 (Magnetic Field Standards)

## Environmental Test Compliance

IEC 60068-2-6 Fc (Vibration Resistance) IEC 60068-2-27

Ea (Shock)

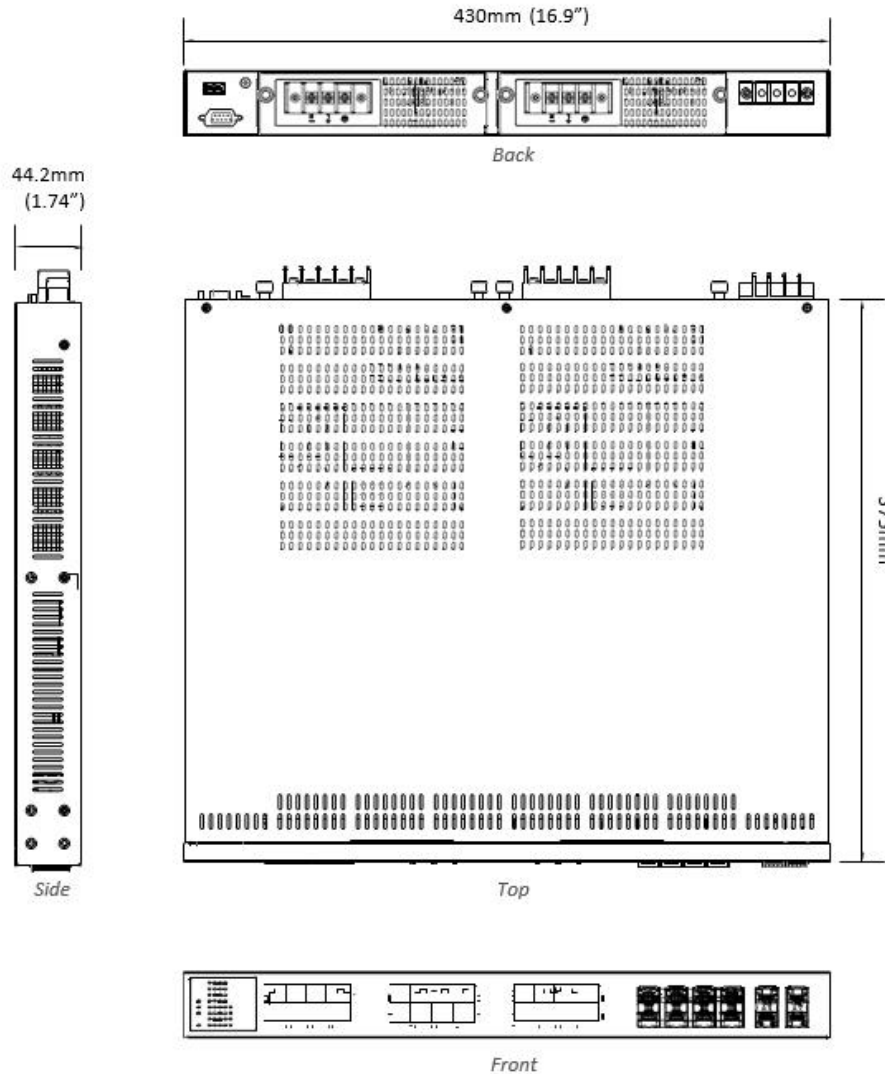
FED STD 101C Method 5007.1 (Free fall w/ package)

## Industrial Compliance

IEC 61850-3 / IEEE 1613

NEMA TS2

# Dimensions



# Ordering Information

Reference	Designation
<b>SWM-HE-24TGX-4SFPP-2A</b>	Hardened Layer 3 Ethernet switch, 1U 19", 24x 10/100/1000BaseT ports, 8 ports Giga SFP Combo, 4 ports 1G/10G SFP+, VLAN tagging 802.1q, QoS 802.1p, port trunking, RSTP, Alfa-Ring <15ms, SNMP V3, VRRP, RIP 1/2, working temp -40°C to +75°C, IEC61850-3/IEEE1613 (energy substation), <b>AC 100-240Vac Redundant power supply</b>
<b>SWM-HE-24TGX-4SFPP-2D</b>	Hardened Layer 3 Ethernet switch, 1U 19", 24x 10/100/1000BaseT ports, 8 ports Giga SFP Combo, 4 ports 1G/10G SFP+, VLAN tagging 802.1q, QoS 802.1p, port trunking, RSTP, Alfa-Ring <15ms, SNMP V3, VRRP, RIP 1/2, working temp -40°C to +75°C, IEC61850-3/IEEE1613 (energy substation), <b>DC 48V Redundant power supply. Terminal Block.</b>



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