

Product Datasheet

16-port Full Gigabit Managed Industrial PoE Switch

SUN-IPS33168PFM



SUN-IPS33168PFM è uno switch industriale PoE gestito Gigabit L2+. Dispone di 8* porte RJ45 adattive 10/100/1000M e 8* porte SFP in fibra 100/1000M. La porta 1-8 supporta lo standard IEEE 802.3 af/at PoE. Alimentazione PoE a porta singola fino a 30 W. Come dispositivo di alimentazione PoE, è in grado di rilevare e identificare automaticamente i dispositivi alimentati conformi agli standard e di alimentarli attraverso i cavi di rete. SUN-IPS33168PFM dispone di una funzione di gestione della rete L2+, supporta la gestione IPV4/IPV6, una politica ACL/QoS completa e ricche funzioni VLAN, che lo rendono facile da gestire e mantenere. Supporta più protocolli di ridondanza di rete STP/RSTP/MSTP (<50ms) e (ITU-T G.8032) ERPS (<20ms) per migliorare il backup dei collegamenti e l'affidabilità della rete.

■ Gigabit access, SFP fiber port uplink

- ◇ Support non-blocking wire-speed forwarding.
- ◇ Support full-duplex based on IEEE802.3x and half-duplex based on Backpressure.
- ◇ Support Gigabit Ethernet port and Gigabit SFP port combination, which enables users to flexibly build networking to meet the needs of various scenarios.

■ Intelligent PoE power supply

- ◇ IEEE802.3af/at PoE standard, without damaging non-PoE devices.
- ◇ PoE network management, realize PoE port power allocation, priority setting, port power status viewing, time scheduling, etc.
- ◇ 8*10/100/1000Base-T RJ45 ports meeting the needs of security monitoring, teleconferencing system, wireless coverage, and other scenarios.
- ◇ Priority system for PoE port, it will supply power to the high priority level port first when the power budget is insufficient and avoid overwork of the device.

■ Security

- ◇ Support port isolation.
- ◇ Support port broadcast storm suppression.
- ◇ Support IP+MAC+port+VLAN quadruple flexible combination binding function.
- ◇ Support 802.1X authentication to provide authentication functions for LAN computers, and control the authorization status of controlled ports according to the authentication results.

■ Strong business processing capability

- ◇ IEEE802.1Q VLAN, flexible VLAN division, Voice VLAN, and QinQ configuration.
- ◇ Ring network STP/RSTP/MSTP spanning tree protocol eliminates layer 2 loops and realizes link backup.
- ◇ QoS, port-based, 802.1P-based and DSCP-based three priority modes and four queue scheduling algorithms: Equ, SP, WRR, and SP+WRR.
- ◇ ACL to filter data packets by configuring matching rule processing operations and time permissions, and provide flexible security access control policies.

- ◇ Static aggregation and dynamic aggregation effectively increase link bandwidth, achieve load balancing, and link backup, and improve link reliability.
- ◇ Support IGMP V1/V2 multicast protocol and IGMP Snooping to meet the needs of multi-terminal high-definition video surveillance and video conferencing access.

■ **Stable and reliable**

- ◇ CCC, CE, FCC, RoHS.
- ◇ The user-friendly panel can show the device status through the LED indicator of PWR, SYS, Link, L/A, and PoE.
- ◇ Low power consumption, no fan, aluminum shell, and excellent heat dissipation ensure the stable operation of the switch.

■ **Easy O&M management**

- ◇ CPU monitoring, memory monitoring, Ping detection, cable length detection.
- ◇ HTTPS, SSLV3, SSHV1/V2, and other encryption methods, making management more secure.
- ◇ RMON, system log, and port traffic statistics to facilitate network optimization and transformation.
- ◇ LLDP to facilitate the network management system to query and judge the communication status of the link.
- ◇ Web network management, CLI (Console, Telnet), SNMP (V1/V2/V3), Telnet and other diversified management and maintenance methods.

TECHNICAL SPECIFICATION

Model	SUN-IPS33168PFM
Interface Characteristics	
Fixed Port	1*Console RS232 port(115200,N,8,1) 8*10/100/1000M PoE ports (Data/Power) 8*100/1000M uplink SFP Fiber ports (Data)

	2 set of V+, V- redundant DC power interface (5 Pin Phoenix terminal)
Ethernet Port	Port 1-8 support 10/100/1000Base-T auto-sensing, full/ half duplex MDI/ MDI-X self-adaption
Twisted Pair Transmission	10BASE-T: Cat3,4,5 UTP(≤100 meters) 100BASE-TX: Cat5 or later UTP(≤100 meters) 1000BASE-T: Cat5e or later UTP(≤100 meters)
SFP Slot Port	Gigabit SFP optical fiber port, default no include optical modules (optional single-mode/ multi-mode, single fiber/ dual fiber optical module. LC)
Optical Fiber Port Expansion	Support Turbo overclocking 2.5G optical module expansion and ring network
Optical Cable/ Distance	Multi-mode: 850nm/ 0-500m Single-mode: 1310nm/ 0-40km, 1550nm/ 0-120km
Chip Parameter	
Network Management Type	L2+
Network Protocol	IEEE802.3 10BASE-T, IEEE802.3i 10Base-T, IEEE802.3u 100Base-TX IEEE802.3ab 1000Base-T, IEEE802.3z 1000Base-X, IEEE802.3x
Forwarding Mode	Store and Forward(Full Wire Speed)
Switching Capacity	52Gbps
Forwarding Rate@64byte	23.81Mpps
CPU	416MHz
DRAM	1G
FLASH	128M
MAC	8K
Buffer Memory	6M
Jumbo Frame	9.6K
LED Indicator	System: SYS (Green), PoE: PoE (Green)

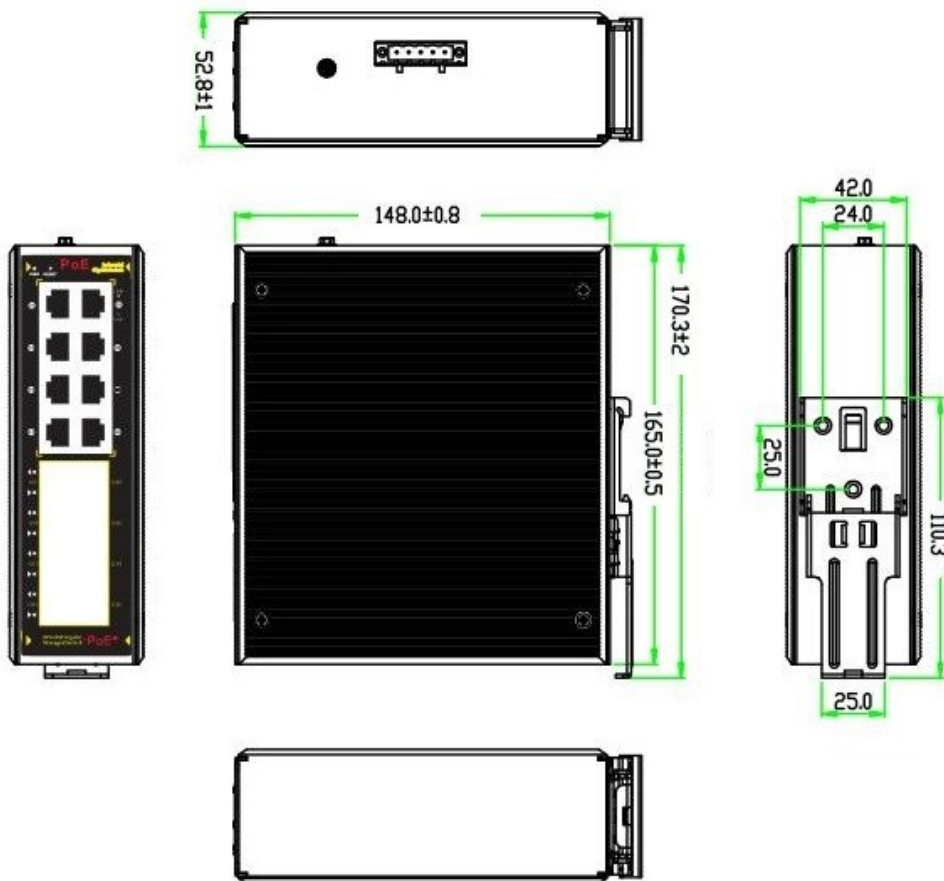
	Fiber port: L/A (Green), Network: Link (Yellow)
Reset Switch	Yes, (Press and hold for 10 seconds and release, the switch will restore the factory settings)
PoE & Power Supply	
PoE Port	Port 1 to 8 IEEE 802.3 af/at
PoE Management	Port PoE working status display Port PoE output priority configuration PoE power supply total power limit configuration Power delay start, PoE work and time scheduling Port PoE output power distribution, PoE on/off, af/at power distribution
Power Supply Pin	1/2 (+) 3/6 (-)
Max Power Per Port	30W, IEEE 802.3 af/at
Power Consumption	Standby<10W, Full load af<120W, at<240W
Working Voltage	DC48-57V, 5 Pin industrial Phoenix terminal, support anti-reverse protection.
Power Supply	No, optional 48V/120W or 48V/240W industrial power supply
Physical Parameter	
Operation TEMP / Humidity	-40~+80°C, 5%~90% RH Non condensing
Storage TEMP / Humidity	-40~+85°C, 5%~95% RH Non condensing
Dimension (L*W*H)	165*148*54mm
Net /Gross Weight	<1.2kg / <1.5kg
Installation	Desktop, 35mm DIN rail
Certification & Warranty	
Lightning Protection	Protection level: IP40 Lightning protection: 6KV 8/20us IEC61000-4-3 (RS):10V/m (80~1000MHz) FCC Part 15/CISPR22 (EN55022): Class B IEC61000-6-2 (Common Industrial Standard)

	<p>IEC61000-4-9 (Pulsed magnet field): 1000A/m</p> <p>IEC61000-4-10 (Damped oscillation): 30A/m 1MHz</p> <p>IEC61000-4-12/18 (Shockwave): CM 2.5kV, DM 1kV</p> <p>IEC61000-4-4(EFT): Power cable: $\pm 4kV$, data cable: $\pm 2kV$</p> <p>IEC61000-4-16 (Common-mode transmission): 30V, 300V, 1s</p> <p>IEC61000-4-2 (ESD): $\pm 8kV$ contact discharge, $\pm 15kV$ air discharge</p> <p>IEC61000-4-6 (Radio frequency transmission): 10V(150kHz~80MHz)</p> <p>IEC61000-4-8 (Power frequency magnetic field): 100A/m, 1000A/m, 1s-3s</p> <p>IEC61000-4-5 (Surge): Power cable: CM$\pm 4kV$/ DM$\pm 2kV$, data cable: $\pm 4kV$</p>
Mechanical Properties	<p>IEC60068-2-6 (Anti Vibration), IEC60068-2-27 (Anti Shock)</p> <p>IEC60068-2-32 (Free Fall)</p>
Certification	<p>CCC, CE mark, commercial, CE/LVD EN62368-1, FCC Part 15 Class B, RoHS</p>
Network Management Features	
Interface	<p>IEEE802.3X (Full-duplex)</p> <p>Port temperature protection setting</p> <p>Port green Ethernet Energy-saving setting</p> <p>Broadcast storm control based on port speed</p> <p>The speed limit of the message flow in the access port, mini particle size is 64Kbps.</p>
Layer 3 Features	<p>ARP protocol max 1024 entries</p> <p>Static routing/ default routing max 128 entries</p> <p>L2+ network management, IPV4/IPV6 dual stack management</p> <p>L3 routing and forwarding, and communication between different network segments and different VLAN</p>
VLAN	<p>Access, Trunk, and Hybrid port configurations</p> <p>Port-based VLAN (4K), IEEE802.1q, QinQ configuration</p>

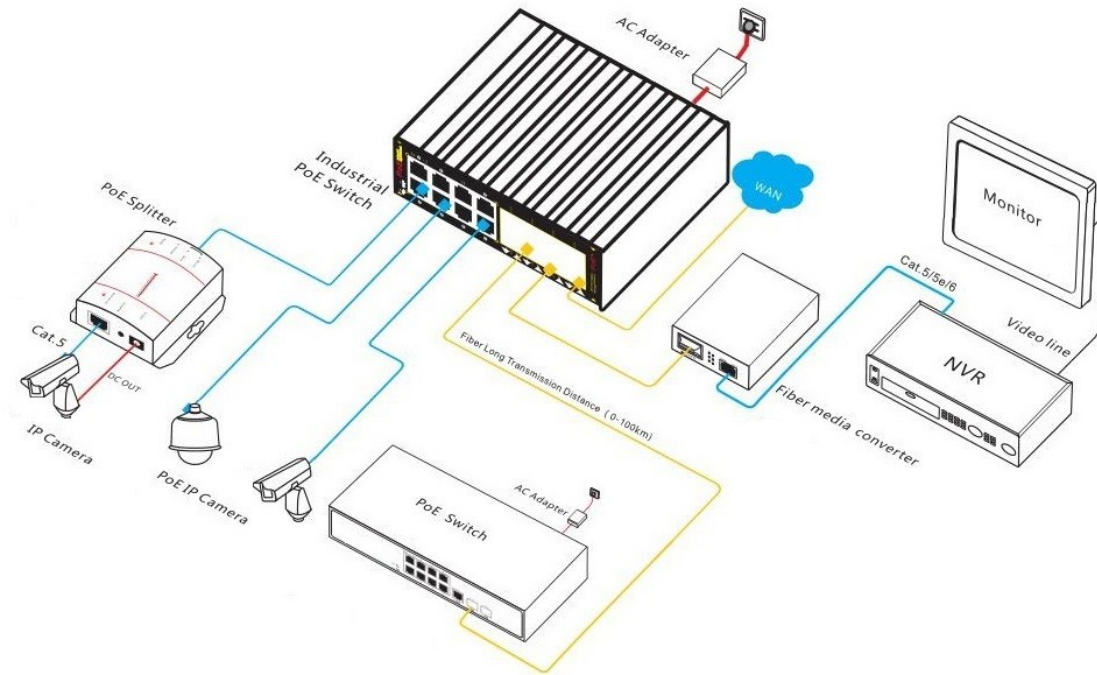
	Voice VLAN, Protocol-based VLAN, MAC address-based VLAN
Port Aggregation	LACP dynamic aggregation, Static aggregation Max 8 aggregation groups and 8 ports per group.
Spanning Tree	STP (IEEE802.1d), RSTP (IEEE802.1w), MSTP (IEEE802.1s)
Industrial Ring	Recovery time less than 20ms
Network Protocol	G.8032 (ERPS), 250 Ring at most, Max 250 devices per ring.
Multicast	MLD Snooping v1/v2, Multicast VLAN, Fast log out IGMP Snooping v1/v2, Max 1024 multicast groups
Port Mirroring	Bidirectional data mirroring based on port
QoS	Diff-Serv QoS, Priority mark/ remark Queue scheduling algorithm (SP, WRR, SP+WRR) Flow-based rate limiting, Flow-based packet filtering 8*Output queues of each port, 802.1p/ DSCP priority mapping
ACL	Port-based Issuing ACL, ACL based on port and VLAN L2 to L4 packet filtering, matching first 80 bytes message. Provide ACL based on MAC, Destination MAC address, IP Source, Destination IP, IP Protocol Type, TCP/UDP Port, TCP/UDP Port Range, and VLAN, etc.
Security	Mac black holes, IP source protection IEEE802.1X & MAC address authentication Broadcast storm control, Backup for host datum SSH 2.0, SSL, Port isolation, ARP message speed limit User hierarchical management and password protection Anti-DoS attack, AAA& RADIUS &TACACS+ certification IP-MAC-VLAN-Port binding, ARP inspection, MAC learning limit
DHCP	DHCP Client, DHCP Snooping, DHCP Server, DHCP Relay
Management	CPU real-time utilization status view, SNMP V1/V2/V3 Console/ AUX Modem/ Telnet/ SSH2.0, CLI configuration Cable length status detection, NTP clock, One-key recovery, LLDP FTP, TFTP, Xmodem, SFTP file upload and download management Ping detection, System work log, Web network management (HTTPS)
System	Category 5 Ethernet network cable

Web browser: Mozilla Firefox 2.5 or higher, Google browser chrome V42 or higher, Microsoft Internet Explorer10 or later
TCP/IP, network adapter, and network operating system (such as Microsoft Windows, Linux, or Mac OS X) installed on each computer in a network

DIMENSION



APPLICATION



ORDERING INFORMATION

Model	Description	Recommended Power Supply
SUN-IPS33168PFM	L2+ managed industrial PoE fiber switch with 8*10/100/1000M RJ45 ports and 8*100/1000M SFP ports. Port 1-8 can support IEEE 802.3 af/at PoE standard. It can support dual DC power input and DIN rail mounting.	120W/240W

Note: The optical module and power supply are not included. need to be purchased separately.

OPTICAL MODULE

Product	Model	Description	Unit
1.25G Optical Module	SUN-2630-G	Industrial SFP optical module, 1.25G multi-mode dual fiber 850nm, transmission distance: 550m, LC interface. supports DDM function and hot plugging.	PC
	SUN-2632-G	Industrial SFP optical module, 1.25G, single-mode dual fiber 1310nm, transmission distance: 20km, LC interface. supports DDM function and hot plugging.	PC
	SUN-2612-T-G	Industrial SFP optical module, 1.25G, single-mode single fiber TX1310nm/ RX1550nm, transmission distance: 20km, LC interface. supports DDM function and hot plugging.	PC
	SUN-2613-R-G	Industrial SFP optical module, 1.25G, single-mode single fiber TX1550nm/ RX1310nm, transmission distance: 20km, LC interface. supports DDM function and hot plugging.	PC
	SUN-2612-T-G-SC	Industrial SFP optical module, 1.25G, single-mode single fiber TX1310nm/ RX1550nm, transmission distance: 20km, SC interface. supports DDM function and hot plugging.	PC
	SUN-2613-R-G-SC	Industrial SFP optical module, 1.25G, single-mode single fiber TX1550nm/ RX1310nm, transmission distance: 20km, SC interface. supports DDM function and hot plugging.	PC
Power Module	SUN-2633	1.25G SFP optical module transfers to 10/100/1000M RJ45 port.	PC

POWER SUPPLY

Product	Model	Description	Unit
130W Desktop Power Adapter	SUN-AP130-52	Desktop 130W single set of output power adapter Input Voltage: AC100V~240V 50-60Hz, 2.3A Output Voltage: DC52V, 2.5A Operation Temperature: -20°C to +65°C	PC
250W Desktop Power Adapter	SUN-AP250-52	Desktop 250W single set of output power adapter Input Voltage: AC100V~240V 50-60Hz, 4.1A Output Voltage: DC52V, 4.8A Operation Temperature: -20°C to +65°C	PC
120W DIN Rail Industrial Power Supply	SUN-DP120-48	DIN Rail 120W single set of output power supply Input Voltage: AC100V~240V 50-60Hz, 1.5A Output Voltage: DC48V, 2.5A Operation Temperature: -40°C to +70°C	PC
240W DIN Rail Industrial Power Supply	SUN-DP240-48	DIN Rail 240W single set of output power supply Input Voltage: AC100V~240V 50-60Hz, 3.0A Output Voltage: DC48V, 5.0A Operation Temperature: -40°C to +70°C	PC

RELATED PRODUCT

Model	Description
SUN-IPS33064PFM	L2+ managed industrial PoE fiber switch with 4*10/100/1000M RJ45 ports and 2*100/1000M SFP fiber ports. Port 1-4 can support IEEE 802.3 af/at PoE standard. It can support dual DC power input and DIN rail mounting.
SUN-IPS33084PFM	L2+ managed industrial PoE fiber switch with 4*10/100/1000M RJ45 ports and 4*100/1000M SFP fiber ports. Port 1-4 can

	support IEEE 802.3 af/at PoE standard. It can support dual DC power input and DIN rail mounting.
SUN-IPS33108PFM	L2+ managed industrial PoE fiber switch with 8*10/100/1000M RJ45 ports and 2*100/1000M SFP fiber ports. Port 1-8 can support IEEE 802.3 af/at PoE standard. It can support dual DC power input and DIN rail mounting.
SUN-IPS33148PFM	L2+ managed industrial PoE fiber switch with 10*10/100/1000M RJ45 ports and 4*100/1000M SFP fiber ports. Port 1-8 can support IEEE 802.3 af/at PoE standard. It can support dual DC power input and DIN rail mounting.
SUN-IPS33168PFM-4GF	L2+ managed industrial PoE fiber switch with 12*10/100/1000M RJ45 ports and 4*100/1000M SFP fiber ports. Port 1-8 can support IEEE 802.3 af/at PoE standard. It can support dual DC power input and DIN rail mounting.

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