

Product Datasheet

16-port Full Gigabit Managed Industrial PoE Switch (ONV-IPS33168PFM)



OVERVIEW

The ONV-IPS33168PFM is a Gigabit L2+ managed industrial PoE switch independently developed by ONV. It has 8*10/100/1000M adaptive RJ45 ports and 8*100/1000M SFP fiber ports. Port 1-8 can support IEEE 802.3 af/at PoE standard. Single-port PoE power up to 30W. As a PoE power supply device, it can automatically detect and identify powered devices that meet standards and power them through network cables. It can power wireless AP, IP cameras, Internet phones, industrial sensors, and other PoE terminal equipment through network cables to meet the network environment that requires a high-density PoE power supply. It is suitable for intelligent transportation, rail transportation, power industry, mining, petroleum, shipping, etc. Industrial scenarios such as metallurgy and green energy construction establish cost-effective, stable, and reliable communication networks.

The ONV-IPS33168PFM has L2+ network management function, supports IPv4/IPv6 management, static route forwarding, complete security protection mechanism, complete ACL/QoS policy, and rich VLAN functions, making it easy to manage and maintain. Supports multiple network redundancy protocols STP/RSTP/MSTP (<50ms) and (ITU-T

G.8032) ERPS (<20ms) to improve link backup and network reliability. Communication can be quickly restored when a one-way network fails. Ensure uninterrupted communication for important applications. According to application needs, PoE management, port management, routing address management, port flow control, VLAN division, IGMP, security policy, and other application service configurations are performed through network management methods such as Web, CLI, SNMP, and Telnet.

FEATURE

■ 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	ONV-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 /	-40~+80°C, 5%~90% RH Non condensing

Humidity	
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	<p>Protection level: IP40</p> <p>Lightning protection: 6KV 8/20us</p> <p>IEC61000-4-3 (RS):10V/m (80~1000MHz)</p> <p>FCC Part 15/CISPR22 (EN55022): Class B</p> <p>IEC61000-6-2 (Common Industrial Standard)</p> <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: ±4kV, data cable: ±2kV</p> <p>IEC61000-4-16 (Common-mode transmission): 30V, 300V, 1s</p> <p>IEC61000-4-2 (ESD): ±8kV contact discharge, ±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±4kV/ DM±2kV, data cable: ±4kV</p>
Mechanical Properties	IEC60068-2-6 (Anti Vibration), IEC60068-2-27 (Anti Shock)
	IEC60068-2-32 (Free Fall)
Certification	CCC, CE mark, commercial, CE/LVD EN62368-1, FCC Part 15 Class B, RoHS
Warranty	5 years, lifelong maintenance.
Network Management Features	

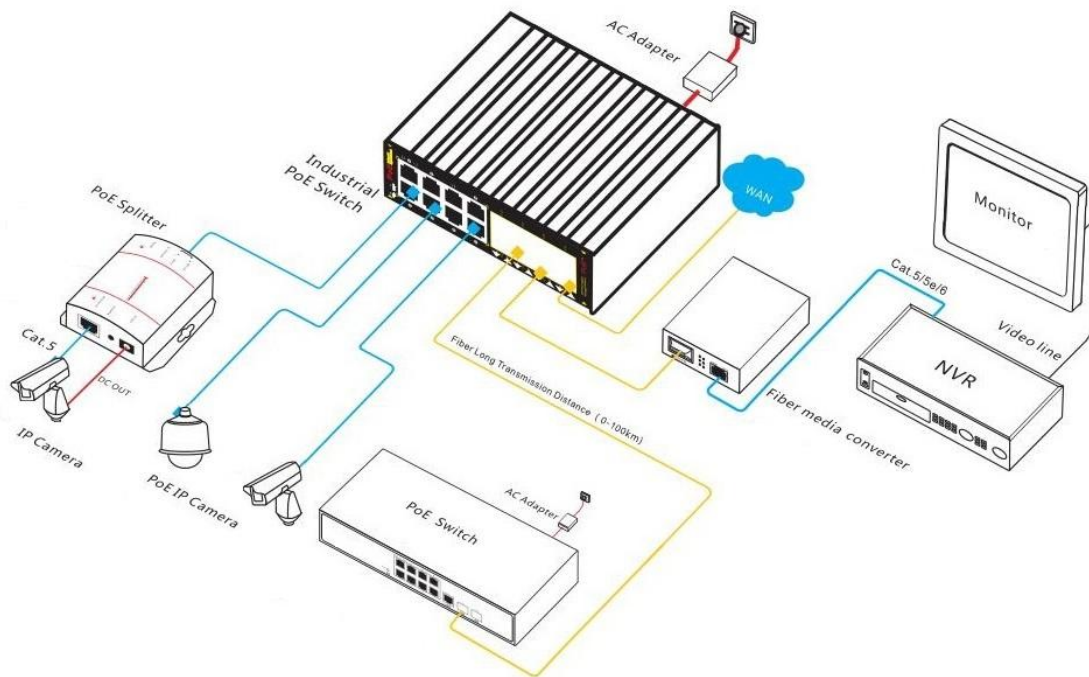
Interface	<p>IEEE802.3X (Full-duplex)</p> <p>Port temperature protection setting</p> <p>Port green Ethernet Energy-saving setting</p> <p>Broadcast storm control based on port speed</p> <p>The speed limit of the message flow in the access port, mini particle size is 64Kbps.</p>
Layer 3 Features	<p>ARP 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> <p>Voice VLAN, Protocol-based VLAN, MAC address-based VLAN</p>
Port Aggregation	<p>LACP dynamic aggregation, Static aggregation</p> <p>Max 8 aggregation groups and 8 ports per group.</p>
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	<p>MLD Snooping v1/v2, Multicast VLAN, Fast log out</p> <p>IGMP Snooping v1/v2, Max 1024 multicast groups</p>
Port Mirroring	Bidirectional data mirroring based on port
QoS	<p>Diff-Serv QoS, Priority mark/ remark</p> <p>Queue scheduling algorithm (SP, WRR, SP+WRR)</p> <p>Flow-based rate limiting, Flow-based packet filtering</p> <p>8*Output queues of each port, 802.1p/ DSCP priority mapping</p>
ACL	<p>Port-based Issuing ACL, ACL based on port and VLAN</p> <p>L2 to L4 packet filtering, matching first 80 bytes message. Provide ACL based on MAC, Destination MAC address, IP Source, Destination IP, IP</p>

	Protocol Type, TCP/UDP Port, TCP/UDP Port Range, and VLAN, etc.
Security	<p>Mac black holes, IP source protection</p> <p>IEEE802.1X & MAC address authentication</p> <p>Broadcast storm control, Backup for host datum</p> <p>SSH 2.0, SSL, Port isolation, ARP message speed limit</p> <p>User hierarchical management and password protection</p> <p>Anti-DoS attack, AAA& RADIUS &TACACS+ certification</p> <p>IP-MAC-VLAN-Port binding, ARP inspection, MAC learning limit</p>
DHCP	DHCP Client, DHCP Snooping, DHCP Server, DHCP Relay
Management	<p>ONV-NMS platform cluster management (LLDP+SNMP)</p> <p>CPU real-time utilization status view, SNMP V1/V2/V3</p> <p>Console/ AUX Modem/ Telnet/ SSH2.0, CLI configuration</p> <p>Cable length status detection, NTP clock, One-key recovery, LLDP</p> <p>FTP, TFTP, Xmodem, SFTP file upload and download management</p> <p>Ping detection, System work log, Web network management (HTTPS)</p>
System	<p>Category 5 Ethernet network cable</p> <p>Web browser: Mozilla Firefox 2.5 or higher, Google browser chrome V42 or higher, Microsoft Internet Explorer10 or later</p> <p>TCP/IP, network adapter, and network operating system (such as Microsoft Windows, Linux, or Mac OS X) installed on each computer in a network</p>

DIMENSION



APPLICATION



ORDERING INFORMATION

Model	Description	Recommended Power Supply
ONV-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.

PACKING LIST

	Content	Qty	Unit
Packing List	16-port full gigabit managed industrial PoE switch	1	SET
	RJ45-DB9 Line	1	PC
	User Guide	1	PC
	Warranty Card	1	PC

OPTICAL MODULE

Product	Model	Description	Unit
1.25G Optical Module	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
	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

	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
	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
	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
	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	2633	1.25G SFP optical module transfers to 10/100/1000M RJ45 port.	PC

POWER SUPPLY

Product	Model	Description	Unit
130W Desktop Power Adapter	GWS-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	GWS-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	GWS-DP120-48	DIN Rail 120W single set of output power supply Input Voltage: AC100V~240V 50-60Hz, 1.5A Output Voltage: DC48V, 2.5A	PC

		Operation Temperature: -40°C to +70°C	
240W DIN Rail Industrial Power Supply	GWS-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
ONV-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.
ONV-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.
ONV-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.
ONV-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.
ONV-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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