

Product Datasheet

16-port 10G Uplink Managed Industrial PoE Fiber Switch (ONV-IPS36168PFM)



OVERVIEW

The ONV-IPS36168PFM is a 10G uplink L2+ managed industrial PoE fiber switch independently developed by ONV. It has 12*10/100/1000Base-T adaptive RJ45 ports and 4*1/10G uplink SFP+ fiber ports. Port 1-8 can support IEEE 802.3 af/at PoE standard and single-port PoE power reaches 30W. As a PoE power supply device, it can automatically detect and identify the power-receiving devices that meet the standard and power them through the network cable. It can power wireless APs, IP cameras, IP phones, industrial sensors, and other PoE terminal devices through the network cable to meet the network environment that requires a high-density PoE power supply. It is suitable for industrial scenarios such as intelligent transportation, rail transportation, power industry, mining, metallurgy, and green energy construction to form an economical, efficient, stable, and reliable communication network.

The ONV-IPS36168PFM has L2+ network management functions, supports IPV4/IPV6 management, static routing full-line forwarding, complete security protection mechanism,

perfect ACL/QoS strategy, and rich VLAN functions for easy management and maintenance. It supports a variety of industrial-grade redundant ring network protocols, and any port can form a ring, supporting chain, star, double star, ring, tangent ring, intersecting ring, and coupled ring. It has high reliability, high security, and high manageability, ensuring reliable transmission of key data, supporting remote management, and cluster management through the ONV-NMS network management platform to achieve full-range blind spot network management.

FEATURE

■ Full gigabit port, uplink 1/10G uplink SFP+ fiber port

- ◇ Support non-blocking wire-speed forwarding.
- ◇ Support full-duplex based on IEEE802.3x and half-duplex based on Backpressure.
- ◇ Support Gigabit RJ45 port and uplink 1/10G SFP+ fiber port combination, which enables users to flexibly build networking to meet the needs of various scenarios.

■ Smart PoE power supply

- ◇ PoE network management, realize PoE port power allocation, priority setting, port power status viewing, time scheduling, etc.
- ◇ Comply with IEEE 802.3 af/at PoE standard, automatically identify PoE devices for power supply, and not damage non-PoE devices.
- ◇ 8*10/100/1000Base-T RJ45 ports support PoE power, meeting the PoE power requirements of security monitoring, industrial automation systems, wireless coverage and other scenarios.

■ Security

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

■ Strong business processing capability

- ◇ Support industrial ERPS ring network and STP/ RSTP/ MSTP to eliminate layer 2 loops and realize link backup.
- ◇ Support IEEE802.1Q VLAN, Users can flexibly divide VLAN, Voice VLAN, and QinQ configuration according to their needs.
- ◇ Support static and dynamic aggregation to effectively increase link bandwidth, realize load balancing, link backup, and improve link reliability.
- ◇ Support QoS, port-based, 802.1P-based, and DSCP-based three priority modes and four queue scheduling algorithms: Equ, SP, WRR, and SP+WRR.
- ◇ Support ACL to filter data packets by configuring matching rule processing operations and time permissions, and provide flexible security access control policies.
- ◇ Support IGMP V1/V2/V3 multicast protocol, IGMP Snooping meets multi-terminal high-definition video surveillance and video conference access requirements.

■ Stable and reliable

- ◇ CCC, CE, FCC, RoHS.
- ◇ The user-friendly panel can show the device status through the LED indicator of PWR, Link, and PoE.
- ◇ Low power consumption, aluminum shell, and excellent heat dissipation to ensure the stable operation of the switch.

■ Easy O&M management

- ◇ Support CPU monitoring, memory monitoring, Ping detection, and cable length detection.
- ◇ HTTPS, SSLV3, SSHV1/V2, and other encryption methods are more secure in management.
- ◇ RMON, system log, and port traffic statistics are convenient for network optimization and transformation.
- ◇ LLDP is convenient for the network management system to query and judge the communication status of the link.

- ◇ Support diverse management and maintenance methods such as Web network management, CLI command line (Console, Telnet), SNMP (V1/V2/V3), Telnet, etc.

TECHNICAL SPECIFICATION

Model	ONV-IPS36168PFM
Interface Characteristics	
Fixed Port	Power off alarm switch (FAULT) 4*1/10G uplink SFP+ fiber ports (Data) 4*10/100/1000Base-T RJ45 ports (Data) 8*10/100/1000Base-T PoE ports (Data/ Power) 2 set of V+, V- redundant DC power ports (6 Pin Phoenix terminal)
Ethernet Port	Port 1-12 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)
Optical Fiber Port	1/10G SFP+ optical fiber portse, default no include optical module (optional single-mode/ multi-mode, single fiber/ dual fiber optical module. LC)
SFP Port Expansion	Turbo overclocking 2.5G optical module expansion and ring network
Optical Cable/ Distance	Multi-mode: 850nm/ 0-500m, 0-300m(10G), Single-mode: 1310nm/ 0-40km, 1550nm/ 0-120km.
Chip Parameter	
Network Management Type	L2+
Network Protocol	IEEE 802.3 10BASE-T, IEEE 802.3i 10Base-T, IEEE 802.3u 100Base-TX, IEEE 802.3z 1000Base-X, IEEE 802.3ab 1000Base-T, IEEE 802.3ae 10GBase-SR/LR, IEEE 802.3x
Forwarding Mode	Store and Forward (Full Wire Speed)

Switching Capacity	176Gbps (non-blocking)
Forwarding Rate@64byte	77.38Mpps
CPU	500MHz
DRAM	2G
FLASH	128M
MAC	32K
Buffer Memory	32M
Jumbo Frame	9.6K
LED Indicator	System: SYS (Green), PoE: PoE (Green), Network: Link (Yellow), Fiber Port: L/A (Green)
Reset Switch	Yes, Press and hold the reset switch for 10s and release it to restore the factory settings
PoE & Power Supply	
PoE Port	Port 1-8
PoE Management	PoE power supply total power limit configuration Power delay start, PoE work and time scheduling Port PoE working status display, Port PoE output priority configuration 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<15W, Full load af<120W, at<240W
Working Voltage	DC48-57V, 6 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°C~+80°C, 5%~90% RH Non condensing

Storage TEMP/ Humidity	-40°C~+85°C, 5%~95% RH Non condensing
Dimension (L*W*H)	166*150*75mm
Net /Gross Weight	1.8kg / 2.1kg
Installation	Desktop, 35mm DIN Rail

Certification & Warranty

Lightning Protection	<p>Protection level: IP30</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,1-3s</p> <p>IEC61000-4-5(Surge): Power cable: CM±4kV/DM±2kV, Data cable: ±4kV</p>
Mechanical Properties	<p>IEC60068-2-6 (Anti Vibration), IEC60068-2-32 (Free Fall),</p> <p>IEC60068-2-27 (Anti Shock)</p>
Certification	<p>CCC, CE mark, commercial, CE/LVD EN62368-1, FCC Part 15 Class B,</p> <p>RoHS</p>
Warranty	5 years, lifelong maintenance.

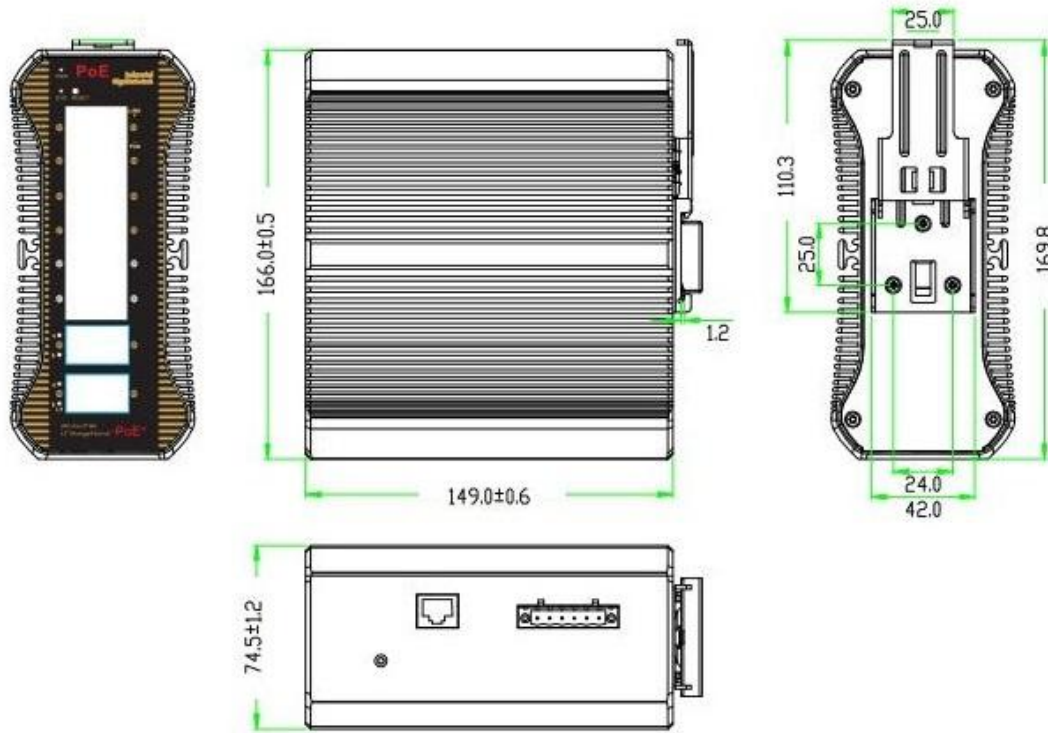
Network Management Feature

Interface	<p>Port temperature protection settings</p> <p>IEEE802.3x flow control (Full duplex)</p> <p>Broadcast storm suppression based on port rate</p>
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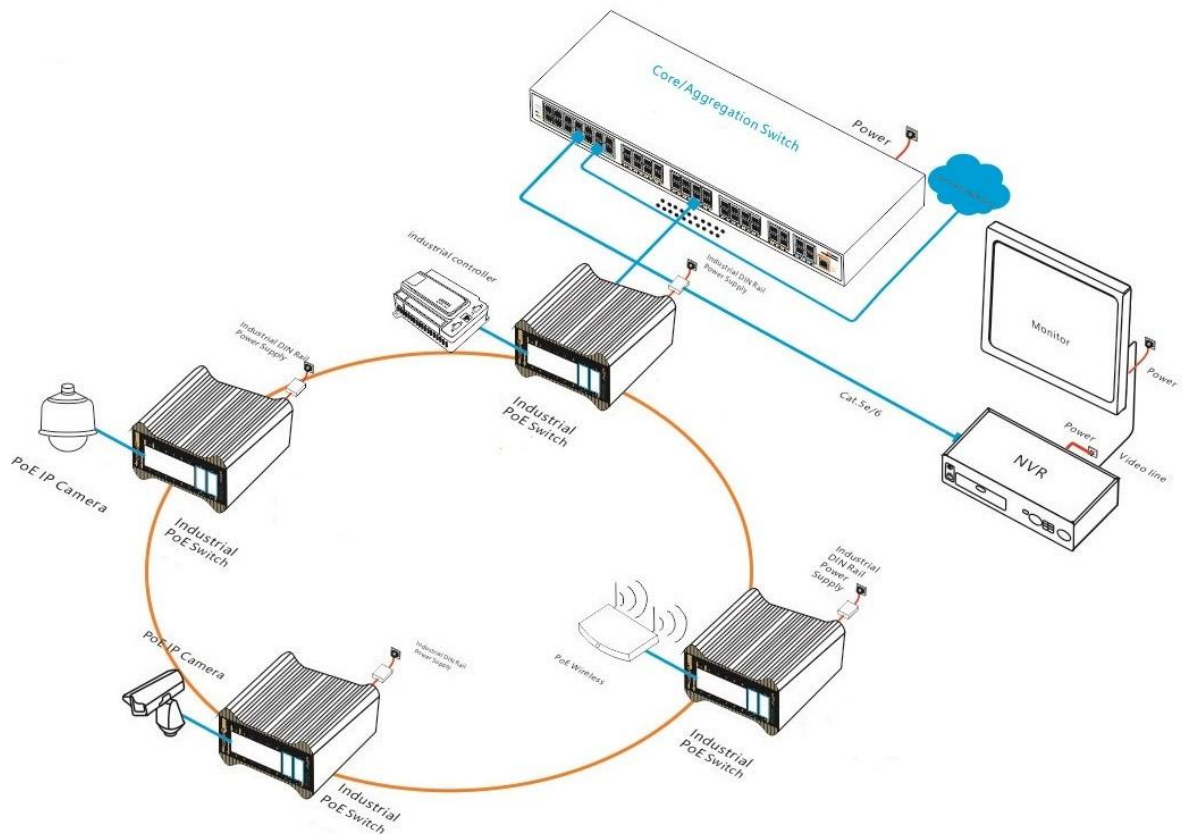
	<p>Port IEEE green Ethernet energy-saving configuration</p> <p>The speed limit of the message flow in the access port, mini particle size is 64Kbps.</p>
Layer 3 Features	<p>L2+ network management function, IPV4/IPV6 dual-stack management</p> <p>ARP protocol, max 1024 entries, Static route/ default route, max 128 entries</p> <p>L3 routing and forwarding support communication between different network segments and different VLAN</p>
VLAN	<p>Access, Trunk, and Hybrid port configurations</p> <p>Voice VLAN, MAC-based VLAN, QinQ configuration</p> <p>Port-based VLAN(4K), IEEE802.1q, Protocol-based VLAN</p>
Port Aggregation	<p>LACP, Static aggregation</p> <p>Max 8 aggregation groups and per group support up to 8 ports</p>
Spanning Tree	STP (IEEE802.1d), RSTP (IEEE802.1w), MSTP (IEEE802.1s)
Industrial Ring	G.8032 (ERPS), Recovery time less than 20ms
Network Protocol	250 Ring at most, Max 250 devices per ring.
Multicast	<p>MLD Snooping, Multicast VLAN, User quick log out</p> <p>IGMP Snooping v1/v2/v3, Max 1024 multicast groups</p>
Port Mirroring	Bidirectional data mirroring based on port
QoS	<p>Queue scheduling algorithm (SP, WRR, SP+WRR)</p> <p>Flow-based rate limiting, Flow-based packet filtering</p> <p>Flow-based redirection, Diff-Serv QoS, Priority mark/ remark</p> <p>8*Output queues of each port, 802.1p/ DSCP priority mapping</p>
ACL	<p>ACL distribution based on port and VLAN</p> <p>L2-L4 packet filtering function, matching the first 80 bytes message, and provides ACL definitions based on source MAC address, destination MAC address, source IP address, destination IP address, IP protocol type, TCP/UDP port, TCP/UDP port range, VLAN, etc.</p>
Security	IP source address protection

	<p>ARP intrusion detection function</p> <p>ARP message rate limiting function</p> <p>Port broadcast message suppression</p> <p>SSL ensures data transmission security</p> <p>Anti-DoS attack, MAC address black hole</p> <p>Port isolation, Host data backup mechanism</p> <p>Limit the number of MAC addresses learned</p> <p>AAA & RADIUS & TACACS+ certification</p> <p>Quadruple binding function of IP+MAC+VLAN+port</p> <p>User hierarchical management and password protection</p> <p>SSH 2.0 provides a secure encrypted channel for user login</p> <p>IEEE802.1X authentication/ centralized MAC address authentication</p>
DHCP	DHCP Client, DHCP Snooping, DHCP Server, DHCP Relay
Management	<p>System work log, Link Layer Discovery Protocol</p> <p>Ping detection, Web network management (HTTPS)</p> <p>NTP clock, Cable length detection, SNMP V1/V2/V3</p> <p>ONV-NMS platform cluster management (LLDP+SNMP)</p> <p>One click recovery, View CPU real-time utilization status</p> <p>FTP, TFTP, Xmodem, SFTP file upload and download management</p> <p>Console/ AUX Modem/ Telnet/ SSH2.0 CLI command line configuration</p>
System	<p>Web browser: Mozilla Firefox 2.5 or higher, Google Chrome V42 or higher, Cat5 and above Ethernet cable</p> <p>TCP/IP, network adapter, and network operating system (such as Microsoft Windows, Linux, Mac OS X) installed on each computer in the network Cat5 and above Ethernet cable</p>

DIMENSION



APPLICATION



ORDERING INFORMATION

Model	Description	Recommended Power Supply
ONV-IPS36168PFM	L2+ managed industrial PoE fiber switch with 12*10/100/1000M RJ45 ports and 4*1/10G uplink SFP+ fiber ports. Port 1-8 can support IEEE 802.3 af/at PoE standard. It can support dual DC power supply 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 10G uplink L2+ 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	PC

		interface, supports DDM function and hot plugging.	
	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
10G Optical Module	6630-G	Industrial SFP+ optical module, 10G multi-mode dual fiber 850nm, transmission distance: 300m, LC interface, supports DDM function and hot plugging.	PC
	7832-G	Industrial SFP+ optical module, 10G single-mode dual fiber 1310nm, transmission distance: 20km, LC interface, supports DDM function and hot plugging.	PC
	7832-33-G	Industrial SFP+ optical module, 10G single-mode single fiber TX1330nm/ RX1270nm, transmission distance: 20km, LC interface, supports DDM function and hot plugging.	PC
	7832-27-G	Industrial SFP+ optical module, 10G single-mode single fiber TX1270nm/ RX13300nm, transmission distance: 20km, LC interface, supports DDM function and hot plugging.	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	PC

		Operation Temperature: -20°C to +65°C	
250W Desktop Power Adapter	GWS-AP250-52	Desktop 250W single set of output power adapter Input Voltage: AC100V~240V 50-60Hz, 5.0A Output Voltage: DC52V, 5.0A 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, 2.3A Output Voltage: DC48V, 2.5A Operation Temperature: -40°C to +70°C	PC
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-IPS33168PFM-4GF	L2+ managed industrial PoE fiber switch with 12*10/100/1000M RJ45 ports and 4*100/1000M uplink SFP fiber ports. Port 1-8 can support IEEE 802.3 af/at PoE standard. It can support dual DC power supply input and DIN rail mounting.
ONV-IPS33248PFM	L2+ managed industrial PoE fiber switch with 12*10/100/1000M RJ45 ports and 12*100/1000M uplink SFP fiber ports. Port 1-8 can support IEEE 802.3 af/at PoE standard. It can support dual DC power supply input and DIN rail mounting.
ONV-IPS33248PFM-4GF	L2+ managed industrial PoE fiber switch with 20*10/100/1000M RJ45 ports and 4*100/1000M uplink SFP fiber ports. Port 1-8 can support IEEE 802.3 af/at PoE standard. It can support dual DC power supply input and DIN rail mounting.

ONV-IPS36248PFM	L2+ managed industrial PoE fiber switch with 12*10/100/1000M RJ45 ports and 8*100/1000M uplink SFP fiber ports and 4*1/10G uplink SFP+ fiber ports. Port 1-8 can support IEEE 802.3 af/at PoE standard. It can support dual DC power supply input and DIN rail mounting.
ONV-IPS36248PFM-8G	L2+ managed industrial PoE fiber switch with 20*10/100/1000M RJ45 ports and 4*1/10G uplink SFP+ fiber ports. Port 1-8 can support IEEE 802.3 af/at PoE standard. It can support dual DC power supply input and DIN rail mounting.

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