

Product Datasheet

18-port Full Gigabit Managed Industrial PoE Switch

(ONV-IPS33018PFM)



OVERVIEW

The ONV-IPS33018PFM is a full gigabit managed industrial PoE fiber switch independently developed by ONV. It has 16*10/100/1000Base-T adaptive RJ45 ports and 2*100/1000Base-X uplink SFP fiber ports. Port 1-16 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 recognize the power-receiving equipment that meets the standard and supply power through the network cable. It can supply power to PoE terminal equipment such as wireless AP, IP cameras, VoIP phones, and industrial sensors through a network cable, and meet the network environment that needs a high-density PoE power supply. It is suitable for intelligent transportation, rail transit, electric power, mining, metallurgy, and green energy, industrial scenes such as construction setting up a cost-effective and stable communication network.

The ONV-IPS33018PFM has L2+ network management function to support IPV4/ IPV6 management, static route forwardings, complete security protection, complete ACL/ QoS policy and rich VLAN functions for easy management and maintenance. Supports multiple network redundancy protocols STP/ RSTP/ MSTP (<50ms) and ITU-T G.8032 (<20ms) ERPS to improve link backup and network reliability. When a one-way network fails, communication can be quickly restored to ensure important Continuous communication of applications. According to application needs, PoE power supply management, port flow control, VLAN division, STP, RSTP, and other application configurations can be performed through Web, CLI, and SNMP network management

methods.

FEATURE

■ Gigabit access, 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 Gigabit SFP uplink 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.
- ◇ The PoE port supports the priority mechanism. When the remaining power is insufficient, the power of the high-priority port is given priority to avoid overloading of the device.
- ◇ 16*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 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, SYS, Link, L/A, and PoE.
- ◇ Self-developed power supply, high redundancy design, providing a long term and stable PoE power output.
- ◇ Low power consumption, no fan, galvanized steel metal shell, 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-IPS33018PFM	ONV-IPS33018PFM-at
Interface Characteristics		
Fixed Port	1*RS232 Console port (115200,N,8,1) 2*100/1000Base-X uplink SFP fiber ports (Data) 16*10/100/1000Base-T PoE ports (Data/ Power)	
Ethernet Port	Port 1-16 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	Gigabit optical fiber interface, default no include optical module (optional single-mode/ multi-mode, single fiber/ dual fiber optical module. LC)	
Optical Cable/ Distance	Multi-mode: 850nm / 0-500m, 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 802.3ab 1000Base-T, IEEE 802.3z 1000Base-X, IEEE 802.3x	
Forwarding Mode	Store and Forward (Full Wire Speed)	
Switching Capacity	52Gbps (non-blocking)	
Forwarding Rate @64byte	26.78Mpps	
MAC	8K	
Buffer Memory	6M	
Jumbo Frame	9.6K	

LED Indicator	PoE: PoE (Green), Rate: Speed: (Green), Fiber port: L/A (Green) Power: PWR (Yellow), System: SYS (Yellow), Network: Link (Yellow)	
Reset Switch	Yes, press and hold the switch for 10 seconds and release it to restore the factory settings	
PoE & Power Supply		
PoE Port	Port 1-16	
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	
Total PWR/ Input Voltage	250W / (AC100-240V)	400W / (AC100-240V)
Power Consumption	Standby<16W, Full load<240W	Standby<20W, Full load<380W
Power Supply	Built-in power supply, AC100~240V 50-60Hz, 4.1A	Built-in power supply, AC100~240V 50-60Hz, 5.0A
Power Input Port	Alarm switch port, 2*AC power input ports, 2*DC48-57V input ports Dual input power port design: AC power supply priority to support anti-reverse connection protection, and automatically switches to DC connection when power fails.	
Physical Parameter		
Operation TEMP/ Humidity	-40~+85°C, 5%~90% RH Non condensing	
Storage TEMP/ Humidity	-40~+85°C, 5%~95% RH Non condensing	
Dimension (L*W*H)	440*378*44.5mm	
Net /Gross Weight	5.3kg / 6.1kg	5.5kg / 6.3kg
Installation	Desktop, 1U/19" cabinet	

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	IEC60068-2-6 (Anti Vibration), IEC60068-2-32 (Free Fall), IEC60068-2-27 (Anti Shock)
Certification	CCC, CE mark, commercial, CE/LVD EN62368-1, FCC Part 15 Class B, RoHS
Warranty	5 years, lifelong maintenance.

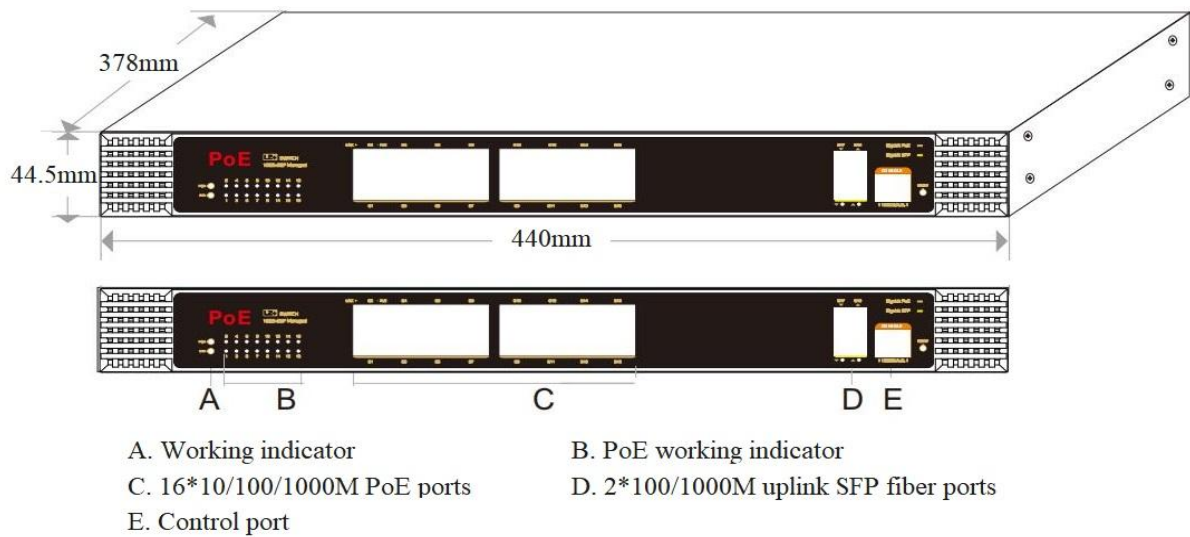
Network Management Feature

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>

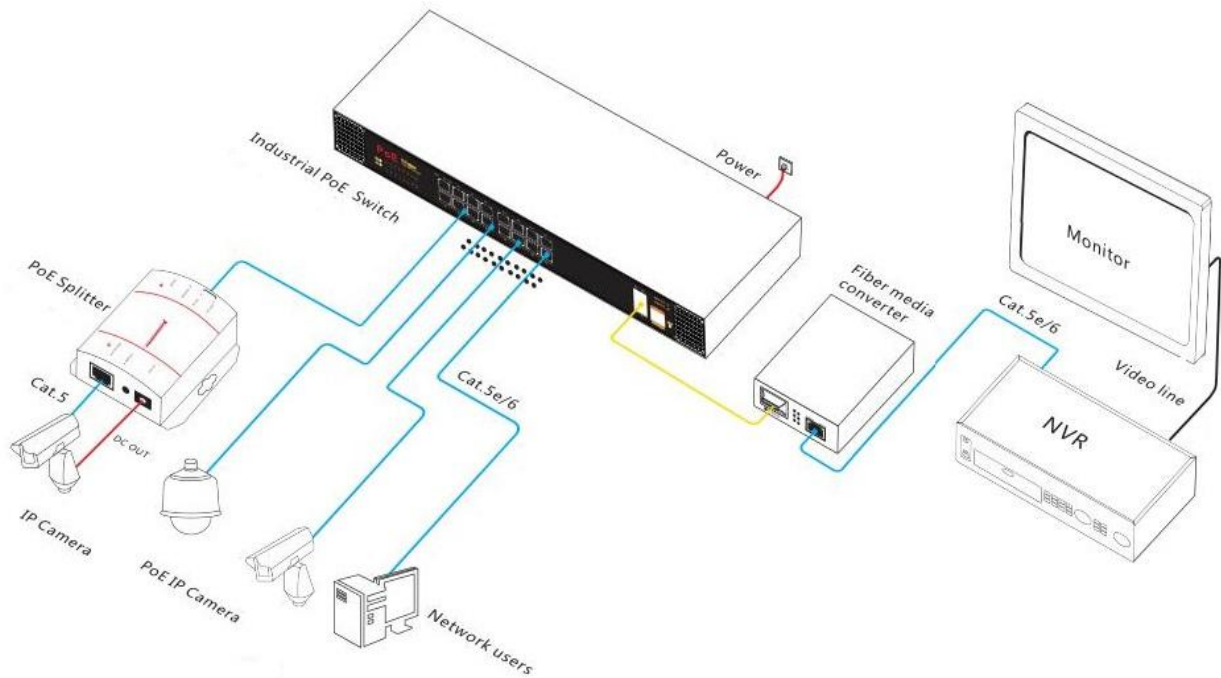
	<p>L2+ network management, IPV4/IPV6 management</p> <p>L3 routing and forwarding, support communication between different network segments and different VLAN</p>
VLAN	<p>Port configuration of Access, Trunk, Hybrid</p> <p>VLAN based on MAC, Voice VLAN, QinQ configuration</p> <p>4K VLAN based on port, IEEE802.1q, VLAN based on the protocol</p>
Port Aggregation	<p>LACP, Static aggregation</p> <p>Max 9 aggregation groups and 8 ports per group.</p>
Spanning Tree	STP (IEEE802.1d), RSTP (IEEE802.1w), MSTP (IEEE802.1s)
Industrial Ring	250 Ring at most, Max 250 devices per ring.
Network Protocol	G.8032 (ERPS), Recovery time less than 20ms
Multicast	<p>MLD Snooping , Multicast VLAN</p> <p>IGMP Snooping v1/v2, Max 1024 multicast groups, Fast log out</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 Protocol Type, TCP/UDP Port, TCP/UDP Port Range, and VLAN, etc.</p>
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	CPU real-time utilization status view, SNMP V1/V2/V3 ONV-NMS platform cluster management (LLDP+SNMP) 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	Web browser: Mozilla Firefox 2.5 or higher, Google Chrome V42 or higher, Cat5 and above Ethernet cable 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

DIMENSION



APPLICATION



ORDERING INFORMATION

Model	Description	Built-in Power Supply
ONV-IPS33018PFM	L2+ managed industrial PoE fiber switch with 16*10/100/1000M RJ45 ports and 2*100/1000M uplink SFP fiber ports. Port 1-16 can support IEEE	250W
ONV-IPS33018PFM-at	802.3 af/at PoE standard. It built-in power supply and 1U/19" cabinet installation.	400W

Note: The optical module is not included and needs to be purchased separately.

PACKING LIST

	Content	Qty	Unit
Packing List	18-port gigabit managed industrial PoE switch	1	SET
	RJ45-DB9 Line	1	PC
	AC Power Cable	1	PC
	Mounting Kit (Hanging Ear)	1	SET
	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-SC-G	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-SC-G	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

CONTACT US

ONV Optical Network Video Technologies (Shenzhen) Co., Ltd.

Tel: 0086-755-33376606

Fax: 0086-755-33376608

Email: onv@onv.com.cn

Skype: onv@onv.com.cn

WeChat ID: ONV-PoE-IoT

Website: www.onvcom.com

Headquarter Address: Room 1003, Block D, Terra Building, Futian District, Shenzhen

Factory Address: Building B3, Galaxy Artificial Intelligence Industrial Park, No. 333, Zhongkai 6th Road, Chenjiang Street, Zhongkai High-tech Zone, Huizhou