**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

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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) <br><br> 2*100/1000Base-X uplink SFP fiber ports (Data) <br><br> 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) <br><br> 100BASE-TX: Cat5 or later UTP (≤100 meters) <br><br> 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 <br><br> 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 <br><br> IEEE802.3ab 1000Base-T, IEEE802.3z 1000Base-X, IEEE802.3x | |
| 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) | |

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| | 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<br>Power delay start, PoE work and time scheduling<br>Port PoE working status display, Port PoE output priority configuration<br>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<br>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 | Protection level: IP30 |
| | 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) |
| | IEC61000-4-9 (Pulsed magnet field): 1000A/m |
| | IEC61000-4-10 (Damped oscillation): 30A/m, 1MHz |
| | IEC61000-4-12/18 (Shockwave): CM 2.5kV, DM 1kV |
| | IEC61000-4-4(EFT): Power cable:±4kV, Data cable: ±2kV |
| | IEC61000-4-16 (Common-mode transmission): 30V, 300V, 1s |
| | IEC61000-4-2 (ESD): ±8kV contact discharge, ±15kV air discharge |
| | IEC61000-4-6 (Radio frequency transmission): 10V(150kHz~80MHz) |
| | IEC61000-4-8 (Power frequency magnetic field):100A/m,1000A/m, 1-3s |
| | IEC61000-4-5( Surge): Power cable: CM±4kV/DM±2kV, Data cable: ±4kV |
| 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 | IEEE802.3X (Full-duplex) |
| | Port temperature protection setting |
| | Port green Ethernet Energy-saving setting |
| | Broadcast storm control based on port speed |
| | The speed limit of the message flow in the access port, mini particle size is 64Kbps. |
| Layer 3 Features | ARP protocol max 1024 entries |
| | Static routing/ default routing max 128 entries |
| | L2+ network management, IPV4/IPV6 management |

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| | |
|---|---|
| | L3 routing and forwarding, support communication between different network segments and different VLAN |
| VLAN | Port configuration of Access, Trunk, Hybrid<br>VLAN based on MAC, Voice VLAN, QinQ configuration<br>4K VLAN based on port, IEEE802.1q, VLAN based on the protocol |
| Port Aggregation | LACP, Static aggregation<br>Max 9 aggregation groups and 8 ports per group. |
| Spanning Tree | STP (IEEE802.1d), RSTP (IEEE802.1w), MSTP (IEEE802.1s) |
| Industrial Ring Network Protocol | 250 Ring at most, Max 250 devices per ring.<br>G.8032 (ERPS), Recovery time less than 20ms |
| Multicast | MLD Snooping , Multicast VLAN<br>IGMP Snooping v1/v2, Max 1024 multicast groups, Fast log out |
| Port Mirroring | Bidirectional data mirroring based on port |
| QoS | Diff-Serv QoS, Priority mark/ remark<br>Queue scheduling algorithm (SP, WRR, SP+WRR)<br>Flow-based rate limiting, Flow-based packet filtering<br>8*Output queues of each port, 802.1p/ DSCP priority mapping |
| ACL | Port-based Issuing ACL, ACL based on port and VLAN<br>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<br>IEEE802.1X & MAC address authentication<br>Broadcast storm control, Backup for host datum<br>SSH 2.0, SSL, Port isolation, ARP message speed limit<br>User hierarchical management and password protection<br>Anti-DoS attack, AAA& RADIUS &TACACS+ certification<br>IP-MAC-VLAN-Port binding, ARP inspection, MAC learning limit |
| DHCP | DHCP Client, DHCP Snooping, DHCP Server, DHCP Relay |

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| 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



378mm
44.5mm
440mm

A B C D E
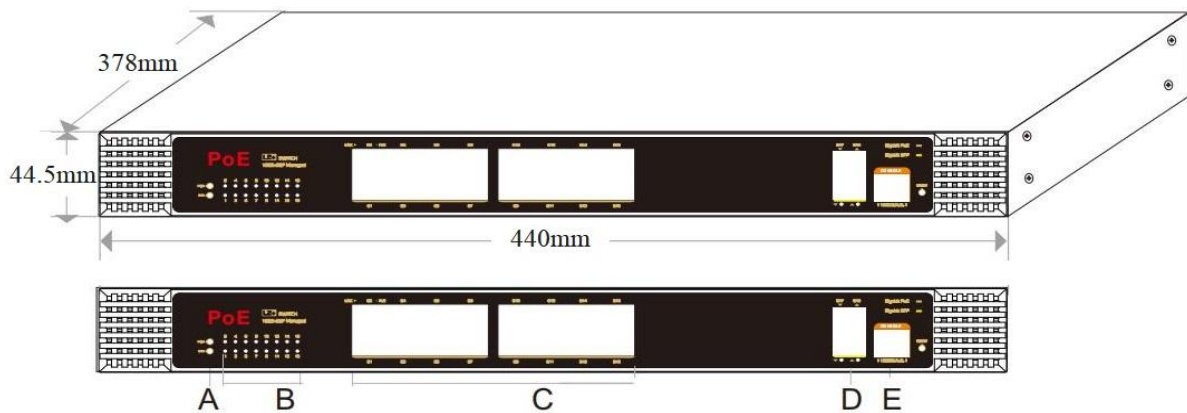
A. Working indicator
B. PoE working indicator
C. 16*10/100/1000M PoE ports
D. 2*100/1000M uplink SFP fiber ports
E. Control port

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# APPLICATION
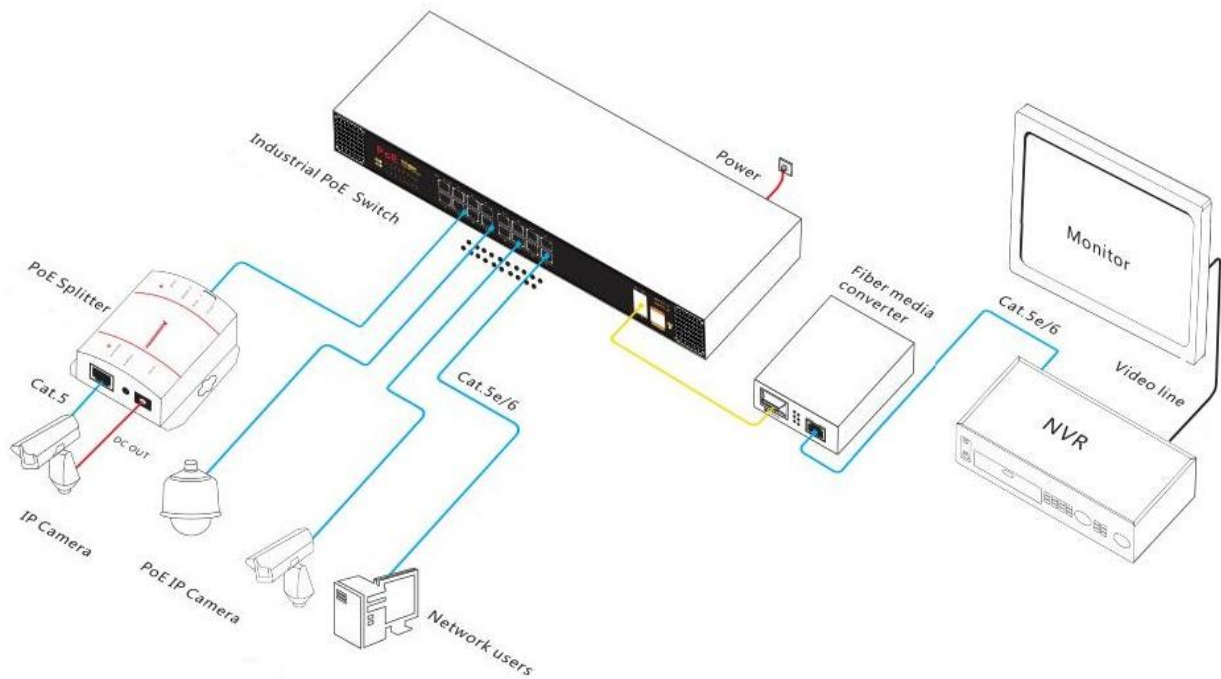


# ORDERING INFORMATION

| 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 802.3af/at PoE standard. It built-in power supply and 1U/19" cabinet installation. | 250W |
| ONV-IPS33018PFM-at | | 400W |
| **Note:** The optical module is not included and needs to be purchased separately. | | |

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# PACKING LIST

| | Content | Qty | Unit |
|---|---|---|---|
| **Packing List** | 18-port full gigabit managed industrial PoE switch | 1 | SET |
| | RJ45-DB9 Line | 1 | PC |
| | AC Power Cable | 1 | PC |
| | Mounting Kits (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 | PC |

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| | | fiber TX1550nm/ RX1310nm, transmission distance: 20km, SC interface, supports DDM function and hot plugging. | |
|---|---|---|---|
| Power Module | 2633 | 1.25G SFP optical module transfers to 10/100/1000M RJ45 port. | PC |

# CONTACT US

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