

Product Datasheet

20-port Gigabit Managed Industrial PoE Switch (ONV-IPS33020PFM)



OVERVIEW

The ONV-IPS33020PFM is a Gigabit managed industrial PoE fiber switch independently developed by ONV. It has 4*100/1000Base-X uplink SFP fiber ports and 16*10/100/1000Base-T adaptive RJ45 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 power-compliant devices that meet the standard and supply power through the network cable. It can supply power to PoE terminal equipment such as wireless AP, IP camera, VoIP, and industrial sensors through the network cable, and meet the network environment that needs a high-density PoE power supply. It is suitable for intelligent transportation, rail transit, power industry, mining, petroleum, and industrial scenes such as shipping, metallurgy, and green energy construction forming a cost-effective, stable, and reliable communication network.

The ONV-IPS33020PFM has L2+ network management functions. It can support IPV4 management and static routing forwarding, complete security protection mechanisms, complete ACL/ QoS policies, and rich VLAN functions, making it easy to manage and maintain. Supports multiple network redundancy protocols RSTP (<50ms) to improve link

backup and network reliability. When a one-way network fails, communication can be quickly restored to ensure uninterrupted communication of important transmissions. According to application needs, PoE power supply management, port flow control, VLAN division, QoS, and other application service configurations can be performed through network management methods such as Web, CLI, SNMP, and Telnet.

FEATURE

■ Gigabit access, uplink SFP fiber port

- ◇ Support non-blocking wire-speed forwarding.
- ◇ Support full-duplex based on IEEE 802.3x and half-duplex based on Backpressure.
- ◇ Support Gigabit RJ45 port and Gigabit SFP port combination, which enables users to flexibly build networking to meet the needs of various scenarios.

■ Smart PoE power supply

- ◇ Comply with IEEE 802.3 af/at PoE power supply standard, automatically identify PoE equipment for power supply.
- ◇ Support PoE network management function, port power status viewing, etc. through network management configuration.
- ◇ 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.

■ Strong business processing capability

- ◇ Support IEEE 802.1Q VLAN.
- ◇ Ring network RSTP spanning tree protocol eliminates layer 2 loops and realizes link backup.
- ◇ Support IGMP Snooping V1/V2 to meet the needs of multi-terminal high-definition video surveillance and video conferencing access.
- ◇ Support QoS, three priority modes based on port, 802.1P-based and DSCP-based, and four queue scheduling algorithms: SP, WRR, and WFQ.

- ◇ Static aggregation and dynamic aggregation effectively increase link bandwidth, achieve load balancing, and link backup, and improve link reliability.
- ◇ Support ACL to filter data packets by configuring matching rules, processing operations, and time permissions to provide flexible security access control strategies.

■ Security

- ◇ Port isolation and storm control.
- ◇ 802.1X authentication provides authentication functions for LAN computers and controls the authorization status of controlled ports according to the authentication results.

■ 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.
- ◇ Using self-developed power supply, redundant dual power supply provides long-term stable PoE power output.
- ◇ Low power consumption, with fan, galvanized steel housing, and excellent heat dissipation to ensure stable operation of the switch.

■ Easy O&M management

- ◇ CPU monitoring, memory monitoring, and Ping detection.
- ◇ System logs and port traffic statistics facilitate network optimization and transformation.
- ◇ LLDP facilitates the network management system to query and determine 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-IPS33020PFM | ONV-IPS33020PFM-at |
|----------------------------------|---|--------------------|
| Interface Characteristics | | |
| Fixed Port | 2*AC100-240V input ports 1*RS232 Console port (115200, N, 8, 1) 4*100/1000Base-X uplink SFP fiber ports (Data) 16*10/100/1000Base-T PoE ports (Data/Power) 2*DC48-57V input ports (Support reverse polarity protection) | |
| Ethernet Port | Port 1-16 support 10/100/1000Base-T(X) 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 port, default no include optical modules (optional single-mode/ multi-mode, single fiber/ dual fiber optical module. LC) | |
| Optical Cable/ Distance | Multi-mode: 850nm/ 0-550m, 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 | 56Gbps (non-blocking) | |
| Forwarding Rate @64byte | 41.7Mpps | |
| CPU | 500M | |
| DRAM | 1G | |

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| FLASH | 256M | |
| MAC | 8K | |
| Buffer Memory | 4.1M | |
| LED Indicator | Power: PWR (Yellow), System: SYS (Yellow), PoE: PoE (Green), Network: Link/Act (Yellow), Fiber port: L/A (Green) | |
| 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 | Port PoE working status display, 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<15W, Full Load<240W | Standby<18W, Full Load<380W |
| Power Supply | Built-in power supply, AC100~240V 50-60Hz, 4.1A | Built-in power supply, AC100~240V 50-60Hz, 4.8A |
| 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°C~+80°C, 5%~90% RH Non condensing | |
| Storage TEMP/ Humidity | -40°C~+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 |

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| Installation | Desktop, 19 inch 1U 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, 1s-3s</p> <p>IEC61000-4-5 (Surge): Power cable: CM±4kV/ DM±2kV, Data cable: ±4kV</p> |
| Mechanical Properties | IEC60068-2-32 (Free Fall), IEC60068-2-6 (Anti Vibration), 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 flow control (Full duplex)</p> <p>Broadcast storm suppression based on port rate</p> <p>Port real-time traffic management (Flow Interval)</p> <p>Limit the rate of packet traffic on incoming and outgoing ports, mini granularity is 16Kbps and max is 1Gbps</p> |
| L3 Feature | IPV4 static route/ default route |
| VLAN | Port-based VLAN (4K), VLAN based on the protocol |

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| | IEEE802.1q, Port configuration of Access, Trunk, Hybrid |
| Port Aggregation | LACP dynamic aggregation, Static aggregation Max 10 aggregation groups and 8 ports per group |
| Spanning Tree | RSTP (IEEE 802.1w) |
| ERPS | ERPSv2 |
| Multicast | Multicast VLAN, User quick exit mechanism, IGMP Snooping v1/v2 |
| Port Mirroring | Bidirectional data mirroring based on port |
| QoS | 802.1p/ DSCP priority mapping, Diff-Serv QoS Queue scheduling algorithm (SP, WRR, WFQ) Flow-based rate limiting, Flow-based packet filtering Flow-based based redirection, 8*Output queues of each port |
| ACL | Port-based and VLAN-delivered ACL The L2-L4 packet filtering function can match the first 80 bytes of the packet and provide information based on source MAC address, destination MAC address, source IP address, destination IP address, IP protocol type, TCP/UDP port, TCP/UDP port range to define the ACL. |
| Security | Port isolation, Port broadcast message suppression Port-based and Mac-based IEEE802.1X certification User hierarchical management and password protection AAA&RADIUS certification, IP source address protection |
| DHCP | DHCP Client, DHCP Snooping |
| Management | Web network management (https), Ping detection ONV-NMS platform cluster management (LLDP+SNMP) One click recovery, View CPU real-time utilization status Link Layer Discovery Protocol (LLDP), System work log Console/ Telnet and CLI configuration, SNMP V1/V2/V3 NTP clock, HTTP file upload and download management |
| 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-IPS33020PFM | L2+ managed industrial PoE fiber switch with 16*10/100/1000M RJ45 ports and 4*100/1000M SFP uplink fiber ports. Port 1-16 can support IEEE | 2*250W |
| ONV-IPS33020PFM-at | 802.3 af/at PoE standard. It built-in power supply and 1U/19" cabinet installation. | 2*400W |

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

PACKING LIST

| | Content | Qty | Unit |
|--------------|---|-----|------|
| Packing List | 20-port Gigabit L2+ managed industrial PoE switch | 1 | SET |
| | RJ45-DB9 Adapter Cable | 1 | PC |
| | AC Power Cable | 1 | PC |
| | Mounting Kit (Hanging Ear) | 1 | SET |
| | User Guide | 1 | PC |
| | Warranty Card and Certificate of Conformity | 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 |

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|--|-------------|--|----|
| | 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 |

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