**Product Datasheet**

# 12-port Full Gigabit Managed Industrial PoE Switch
## (ONV-IPS53128PFM)



## OVERVIEW

The ONV-IPS53128PFM is a Gigabit L2+ managed industrial PoE fiber switch independently developed by ONV. It has 8*10/100/1000Base-T adaptive RJ45 ports and 4*100/1000Base-X uplink SFP fiber ports. Port 1-8 can support IEEE 802.3 af/at PoE standard and single-port PoE power up to 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, 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-IPS53128PFM has L2+ full network management function, supports IPV4/IPV6 management, static route forwarding, complete security protection mechanism, complete

ACL/QoS policy, and rich VLAN functions, and is 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. When a one-way network fails, communication can be quickly restored to ensure important uninterrupted communication for applications. According to the actual application needs, PoE power management, port management, routing address management, port flow control, VLAN division, IGMP, security policy, and other application services are configured through network management methods such as Web, CLI, SNMP, Telnet, etc.

## FEATURE

■ **Gigabit access, SFP fiber port uplink**

◇ 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**

◇ 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.

◇ 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.

■ **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.

■ **Security**

◇ Port isolation, 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.

■ **Stable and reliable**

◇ CCC, CE, FCC, and 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, 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-IPS53128PFM |
|---|---|
| **Interface Characteristics** | |
| Fixed Port | 1*RS232 console port (115200, N, 8,1) |
| | Power failure alarm switch port (FAULT) |
| | 8*10/100/1000Base-T PoE ports (Data/ Power) |
| | 4*100/1000Base-X uplink SFP fiber ports (Data) |
| | 2*DC48-57V input ports (supports reverse connection protection) |
| Ethernet Port | Port 1-8 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/6 or later UTP (≤100 meters) |
| Optical Fiber Port | Default no include optical module (optional single-mode/ multi-mode, single fiber/ dual fiber optical module. LC) |
| Optical Port Expansion | Turbo overclocking 2.5G optical module expansion and ring network |
| Optical Cable/ Distance | Multi-mode: 850nm/ 0-500m (1G) |
| | Single-mode: 1310nm/ 0-40km, 1550nm/ 0-120km |
| **Chip Parameter** | |
| Network | L2+ |

| Management Type | |
|---|---|
| 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 | 128Gbps |
| Forwarding Rate@64byte | 17.86Mpps |
| CPU | 800MHz |
| DRAM | 1Gb |
| FLASH | 128Mb |
| MAC | 16K |
| Buffer Memory | 12Mb |
| Jumbo Frame | 12KB |
| LED Indicator | System: SYS (Green), Network: Link (Yellow), PoE: PoE (Green), 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 1-8 |
| PoE Management | Port PoE real-time load power display Port PoE output on/off, PoE work and time scheduling |
| Power Supply Pin | 1/2(+) 3/6 (-) |
| Max Power Per Port | 30W, IEEE 802.3 af/at |
| Power Consumption | Standby<13W, 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 | -40~+75°C, 5%~90% RH Non condensing |

| /Humidity | |
|---|---|
| Storage TEMP /Humidity | -40~+80°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 | Protection level: IP40

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, 1s-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 flow control (Full duplex)

Port exception protection mechanism |

| | Port real-time flow management (Flow Interval) |
| --- | --- |
| | Broadcast storm suppression based on port rate |
| | Jumbo frame configuration, the largest 12000byte |
| | Optical port SFP module DDMI real-time digital diagnosis |
| | Port EEE Green Ethernet Energy-Saving configuration and status view |
| | Limit the rate of incoming and outgoing packet traffic, with mini granularity of 16Kbps and max of 1Gbps |
| Layer 3 Features | ARP protocol, max 1024 entries |
| | IPv4/IPv6 static route, max 128 entries |
| | L2+ network management function, dual-stack IPv4/IPv6 management |
| VLAN | VLAN based on MAC, VLAN based on the protocol |
| | Port configuration of Access, Trunk, Hybrid. GVRP VLAN protocol |
| | (4K) VLAN based on port, IEEE802.1q, Voice VLAN, QinQ configuration |
| Port Aggregation | LACP, Static aggregation |
| | Max 6 aggregation groups and max 8 ports per group. |
| Spanning Tree | STP BPDU Guard, BPDU filtering and BPDU forwarding |
| | STP (IEEE802.1d), RSTP (IEEE802.1w), MSTP (IEEE802.1s) |
| ERPS Ring Network | Support ERPS ring network, ring network self-healing time is less than 20ms, ITU-T G.8032 |
| Multicast | MLD Snooping, Multicast VLAN |
| | User quick log out, MVR (Multicast VLAN Registration) |
| | IGMP Snooping v1/v2/v3 and 1024 multicast groups at most |
| Mirroring | Bidirectional traffic mirroring for basic ports |
| | one-to-multiple mirroring, supports up to 4 port sessions |
| QoS | Queue Scheduling Algorithm (SP, WRR, SP+WRR) |
| | Flow-based Rate Limiting, Stream based redirection |
| | Flow-based Packet Filtering, 8*Output queues of each port |
| | 802.1p/ DSCP priority mapping, Diff-Serv QoS, Priority Mark/ Remark |
| ACL | ACL distribution based on port and VLAN |

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| 8 | 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. |
|---|---|
| Security | Port based IEEE802.1X authentication<br><br>SSL guarantees data transmission security<br><br>Quad binding function of IP+MAC+VLAN+ports<br><br>MAC address learning limit, MAC address black hole<br><br>Anti DoS attack, Port broadcast message suppression<br><br>IP Source Guard function, AAA&RADIUS certification<br><br>Hierarchical user management and password protection<br><br>SSH 2.0 provides a secure encrypted channel for user login<br><br>Host data backup mechanism, ARP intrusion detection function<br><br>Port isolation, IP Source Guard, ARP message speed limit function |
| DHCP | DHCP Client, DHCP Snooping, DHCP Server |
| Management | Web network management (https)<br><br>Link Layer Discovery Protocol(LLDP)<br><br>Viewing CPU Instant Utilization Status<br><br>NTP clock, One click restore, SNMP V1/V2/V3<br><br>Cable status check, Ping detection, System work log<br><br>ONV NMS platform cluster management (LLDP+SNMP)<br><br>Console/ AUX Modem/ Telnet/ CLI command line configuration<br><br>FTP, TFTP, Xmodem, SFTP file upload and download management |
| System | Web browser: Mozilla Firefox 2.5 or higher, Google Chrome V42 or higher, Cat5 and above Ethernet cable<br><br>TCP/IP, network adapter, and network operating system (such as Microsoft Windows, Linux, Mac OS X) installed on each computer in the network<br><br>Cat5 and above Ethernet cable |

# DIMENSION

# APPLICATION

## ORDERING INFORMATION

| Model | Description | Recommended Power Supply |
|---|---|---|
| ONV-IPS53128PFM | L2+ managed industrial PoE fiber switch with 8*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 support dual DC power supply input and DIN rail mounting. | 120W/240W |

**Note:** The optical module and power supply are not included and need to be purchased.

## PACKING LIST

| | Content | Qty | Unit |
|---|---|---|---|
| **Packing List** | 12-port Gigabit managed industrial PoE switch | 1 | SET |
| | RJ45-DB9 adapter conversion 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 | PC |

| | | | |
|---|---|---|---|
| 11 | | TX1310nm/ RX1550nm, transmission distance: 20km, LC 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-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 SUPPLY

| Product | Model | Description | Unit |
|---|---|---|---|
| 130W Desktop Power Adapter | GWS-AP130-52 | Desktop 130W single set of output power adapter<br>Input Voltage: AC100V-240V 50-60Hz, 2.3A<br>Output Voltage: DC52V, 2.5A<br>Operation Temperature: -20℃ to +65℃ | PC |
| 250W Desktop Power Adapter | GWS-AP250-52 | Desktop 250W single set of output power adapter<br>Input Voltage: AC 100V-240V 50-60Hz, 4.1A<br>Output Voltage: DC52V, 4.8A<br>Operation Temperature: -20℃ to +65℃ | PC |
| 120W DIN Rail Industrial Power Supply | GWS-DP120-48 | DIN Rail 120W single set of output power supply<br>Input Voltage: AC100V-240V 50-60Hz, 1.5A<br>Output Voltage: DC48V, 2.5A<br>Operation Temperature: -40℃ to +70℃ | PC |
| 240W DIN Rail Industrial Power | GWS-DP240-48 | DIN Rail 240W single set of output power supply<br>Input Voltage: AC100V-240V 50-60Hz, 3.0A | PC |

| Supply | | Output Voltage: DC48V, 5.0A |
| --- | --- | --- |
| | | Operation Temperature: -40℃ to +70℃ |

## CONTACT US

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