

## Product Datasheet

# 12-port 2.5G Managed Industrial PoE Switch (ONV-IPS57128PFM)



## OVERVIEW

The ONV-IPS57128PFM is a 2.5G managed industrial PoE switch independently developed by ONV. It has 8\*10/100/1000/2500Base-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 the single-port PoE power up to 30W. As a PoE power supply device, it can automatically detect and recognize power-receiving 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. It also meets 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-IPS57128PFM has L2+ network management functions, supports IPV4/IPV6 management, static route forwarding, complete security protection mechanisms, complete ACL/QoS policies, and rich VLAN functions for easy management and maintenance.

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 uninterrupted communication for important applications. According to application needs, PoE management, port management, routing address management, port flow control, VLAN division, IGMP, security policy, and other business configurations are performed through network management methods such as Web, CLI, SNMP, and Telnet.

## FEATURE

### ■ 2.5G access, uplink 1/10G SFP+ fiber port

- ◇ Support non-blocking wire-speed forwarding.
- ◇ Support full-duplex based on IEEE 802.3x and half-duplex based on Backpressure.
- ◇ Support 2.5G RJ45 port and 1/10G uplink 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.
- ◇ 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\*10/100/1000/2500Base-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 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 meets multi-terminal high-definition video surveillance and video conference access requirements.

### ■ 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.

### ■ 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.
- ◇ Low power consumption, aluminum alloy housing, and excellent heat dissipation to ensure the stable operation of the switch.

### ■ Easy O&M management

- ◇ 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.

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

## TECHNICAL SPECIFICATION

| Model                            | ONV-IPS57128PFM  |
|----------------------------------|--|
| <b>Interface Characteristics</b> |  |
| Fixed Port                       | Power off alarm switch port (FAULT)<br>1*Console RS232 port (115200, N, 8,1)<br>4*1/10G uplink SFP+ fiber ports (Data)<br>8*10/100/1000/2500Base-T PoE ports (Data/ Power)<br>2 set V+, V- redundant DC power ports (6P industrial Phoenix terminal) |
| Ethernet Port                    | Port 1-8 can support 10/100/1000/2500Base-T auto-sensing, full/ half duplex MDI/ MDI-X self-adaption   |
| Twisted Pair Transmission        | 10BASE-T: Cat3,4,5 UTP (≤100 meters)<br>100BASE-TX: Cat5 or later UTP (≤100 meters)<br>1000BASE-T: Cat5e or later UTP (≤100 meters)<br>2500BASE-T: Cat6a or later UTP (≤100 meters)  |
| Optical Fiber Port               | 1/10G SFP+ optical fiber port, default no include optical module (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  |
| <b>Chip Parameter</b>            |  |
| 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 802.3be 2.5GBase-T, IEEE 802.3ae 10GBase-SR/LR, IEEE 802.3x   |
| Forwarding Mode                  | Store and Forward (Full wire speed)  |
| Switching Capacity               | 96Gbps (non-blocking)  |

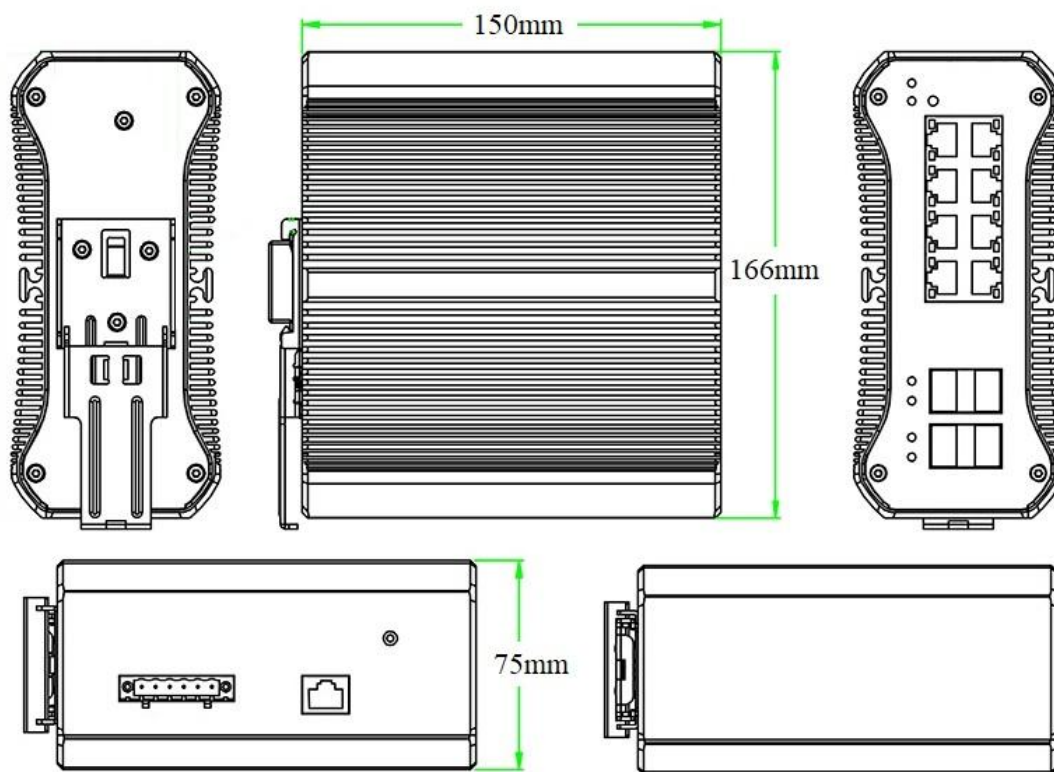
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| Forwarding Rate@64byte             | 89.28Mpps   |
| CPU                                | Dual Core 1GHz  |
| DRAM                               | 2G  |
| FLASH                              | 256M  |
| MAC                                | 32K   |
| Buffer Memory                      | 16M   |
| Jumbo Frame                        | 12K   |
| LED Indicator                      | Power/ System: SYS (Green), Rate: 100/1000 (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                          |
| <b>PoE&amp; Power Supply</b>       |   |
| 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   |
| Input Voltage/ Interface           | DC48-57V, 6P industrial Phoenix terminal, support anti-reverse protection.  |
| Power Supply                       | No, optional 48V/120W or 48V/240W industrial power supply   |
| <b>Physical Parameter</b>          |   |
| Operation Temp/ Humidity           | -40~+75°C, 5%~90% RH non condensing   |
| Storage Temp/ Humidity             | -40~+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  |
| <b>Certification&amp; Warranty</b> |   |
| Lightning Protection               | IEC61000-4-3 (RS):10V/m (80~1000MHz)<br>FCC Part 15/CISPR22 (EN55022): Class A  |

|                                   |   |
|-----------------------------------|---|
|                                   | <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>Protection level: IP40, Lightning protection: 6KV 8/20us</p> <p>IEC61000-4-4(EFT): Power cable: <math>\pm 4</math>kV, data cable: <math>\pm 2</math>kV</p> <p>IEC61000-4-16 (Common-mode transmission): 30V, 300V, 1s</p> <p>IEC61000-4-2 (ESD): <math>\pm 8</math>kV contact discharge, <math>\pm 15</math>kV 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<math>\pm 4</math>kV/ DM<math>\pm 2</math>kV, data cable: <math>\pm 4</math>kV</p> |
| Mechanical Properties             | IEC60068-2-6 (Anti Vibration), IEC60068-2-27 (Anti Shock), IEC60068-2-32 (Free Fall)  |
| Certification                     | CE mark, commercial, CE/LVD EN62368-1, FCC Part 15 Class A, RoHS  |
| Warranty                          | 5 years, lifelong maintenance.  |
| <b>Network Management Feature</b> |   |
| Interface                         | <p>IEEE 802.3x flow control (Full duplex)</p> <p>Port exception protection mechanism</p> <p>Port real-time flow management (Flow Interval)</p> <p>Broadcast storm suppression based on port rate</p> <p>Optical port SFP module DDMI real-time digital diagnosis</p> <p>Port EEE Green Ethernet Energy-Saving configuration and status view</p> <p>Limit the rate of incoming and outgoing packet traffic, with mini granularity of 16Kbps and max of 1Gbps</p>   |
| L3 Feature                        | <p>ARP protocol max 1024 entries</p> <p>Static route, RIPv1/v2, RIPv6, OSPFv1/v2, OSPFv3</p> <p>L2+ network management function, IPV4/ IPV6 dual-stack management</p>   |
| VLAN                              | <p>Port configuration of Access, Trunk, Hybrid, IEEE 802.1q</p> <p>Voice VLAN, GVRP VLAN protocol, Port-based VLAN (4K)</p>   |

|                   |   |
|-------------------|---|
|                   | Protocol-based VLAN, MAC address-based VLAN, QinQ configuration   |
| Port Aggregation  | LACP dynamic aggregation, Static aggregation, Max 6 aggregation groups and max 8 ports per group.   |
| Spanning Tree     | STP BPDU Guard, BPDU filtering and BPDU forwarding<br>STP (IEEE802.1d), RSTP (IEEE802.1w), MSTP (IEEE802.1s)  |
| ERPS Ring Network | ERPS, Recovery time less than 20ms, ITU-T G.8032  |
| Multicast         | MLD Snooping, Multicast VLAN<br>User quick log out, MVR (Multicast VLAN Registration)<br>IGMP Snooping v1/v2/v3 and 1024 multicast groups at most   |
| Mirroring         | Bidirectional traffic mirroring for basic ports<br>one-to-multiple mirroring, supports up to 4 port sessions  |
| QoS               | Flow-based rate limiting, Flow-based redirection<br>Queue scheduling algorithm (SP, WRR, SP+WRR)<br>Flow-based packet filtering, 8*Output queues of each port<br>802.1p/ DSCP priority mapping, Diff-Serv QoS, Priority mark/ remark  |
| ACL               | ACL distribution based on port and VLAN<br>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>SSL guarantees data transmission security<br>Quad binding function of IP+MAC+VLAN+ports<br>MAC address learning limit, MAC address black hole<br>IP Source Guard function, AAA& RADIUS certification<br>Anti DoS attack, Port broadcast message suppression<br>Hierarchical user management and password protection<br>SSH 2.0 provides a secure encrypted channel for user login<br>Host data backup mechanism, ARP intrusion detection function |

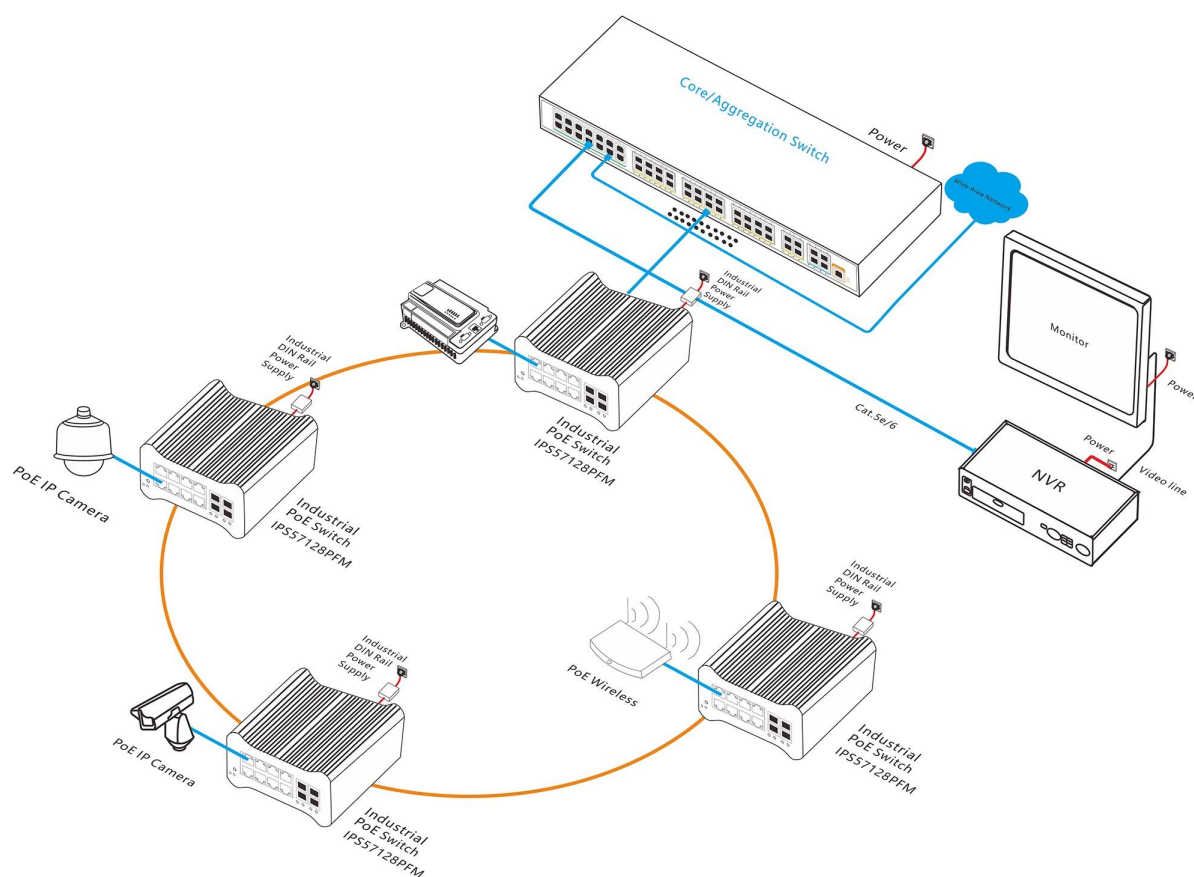
|            |  |
|------------|--|
|            | Port isolation, IP source address protection, ARP message speed limit function   |
| DHCP       | DHCP Client, DHCP Snooping, DHCP Server  |
| Management | <p>NTP clock, Web network management (https)</p> <p>Ping detection, System work log, SNMP V1/V2/V3</p> <p>FTP, TFTP file upload and download management</p> <p>Console/Telnet/CLI/SSH command line configuration</p> <p>ONV-NMS platform cluster management (LLDP+SNMP)</p> <p>One click restore, Link Layer Discovery Protocol (LLDP)</p> <p>Cable status check, Viewing CPU Instant Utilization Status</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-IPS57128PFM | L2+ managed industrial PoE switch with 8*10/100/1000/2500M 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 redundant power input (Phoenix terminal connection) and DIN rail mounting. | 120W/240W                |

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

## PACKING LIST

| Packing List | Content                                     | Qty | Unit |
|--------------|---|-----|------|
|              | 12-port 2.5G managed industrial PoE switch  | 1   | Set  |
|              | RJ45-DB9 Adapter Cable                      | 1   | PC   |
|              | 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   |
|                      | 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   |

|                          |           |   |    |
|--------------------------|-----------|---|----|
| 10G<br>Optical<br>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/ RX1330nm, transmission distance: 20km, LC interface. supports DDM function and hot plugging. | PC |

## POWER SUPPLY

| Product                                     | Model        | Description   | Unit |
|---|--------------|---|------|
| 120W DIN Rail<br>Industrial Power<br>Supply | GWS-DP120-48 | DIN Rail 120W single set of output power supply<br>Input Voltage: AC100V-240V 50-60Hz, 2.3A<br>Output Voltage: DC48V, 2.5A<br>Operation Temperature: -40℃ to +70℃ | PC   |
| 240W DIN Rail<br>Industrial Power<br>Supply | GWS-DP240-48 | DIN Rail 240W single set of output power supply<br>Input Voltage: AC100V-240V 50-60Hz, 3.0A<br>Output Voltage: DC48V, 5.0A<br>Operation Temperature: -40℃ to +70℃ | PC   |

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