#### **Product Datasheet**

# 16-port 10G Uplink Managed Industrial PoE Switch

(ONV-IPS56168PFM-4TF)



#### **OVERVIEW**

The ONV-IPS56168PFM-4TF is a 10G uplink managed industrial PoE switch independently developed by ONV. It has 12\*10/100/1000Base-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 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. It also meets the network environment that needs a high-density PoE power supply. It is suitable for intelligent transportation, rail transit, electric power, mining, metallurgy, green energy, and industrial scenes such as construction, setting up a cost-effective and stable communication network.

The ONV-IPS56168PFM-4TF has L2+ 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 application needs, 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, 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 Gigabit 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\*10/100/1000Base-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

 $\diamond$  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.

#### Security

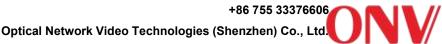
- ♦ Support port isolation and port broadcast storm suppression.
- ♦ IP+MAC+port+VLAN quadruple flexible combination binding function.
- 802.1X authentication provides authentication functions for LAN computers and
   controls the authorization status of controlled ports according to the authentication
   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

- Support CPU monitoring, memory monitoring, Ping detection, and cable length detection.
- ♦ HTTPS, SSLV3, SSHV1/V2, and other encryption methods are more secure in management.



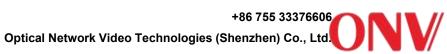
- ♦ RMON, system log, and port traffic statistics are convenient for network optimization and transformation.
- ♦ LLDP is convenient for the network management system to query and judge the communication status of the link.
- ♦ Support diverse management and maintenance methods such as Web network management, CLI command line (Console, Telnet), SNMP (V1/V2/V3), Telnet, etc.

### **TECHNICAL SPECIFICATION**

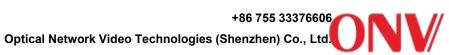
Model	ONV-IPS56168PFM-4TF		
Interface Characteristics			
	1*Console port (115200, N, 8,1)		
	Power failure alarm switch port (FAULT)		
Fixed Port	4*1/10G uplink SFP+ fiber ports (Data)		
FIXEU FOIL	4*10/100/1000Base-T uplink RJ45 ports (Data)		
	8*10/100/1000Base-T PoE ports (Data/ Power)		
	2*DC48-57V input ports (support reverse connection protection)		
Ethernet Port	Port 1-12 can support 10/100/1000Base-T(X) auto-sensing, full/ half duplex		
Ethernet Port	MDI/ MDI-X self-adaption		
	10BASE-T: Cat3,4,5 UTP (≤100 meters)		
Twisted Pair Transmission	100BASE-TX: Cat5 or later UTP (≤100 meters)		
	1000BASE-T: Cat5e/6 or later UTP (≤100 meters)		
Optical Fiber Port	1/10G SFP+ optical fiber port, default no include optical modules (optional		
Optical Fiber Fort	order single-mode/ multi-mode, single fiber/ dual fiber optical module. LC)		
Optical Fiber Port	Turbo overclocking 2.5C entical module expansion and ring network		
Expansion	Turbo overclocking 2.5G optical module expansion and ring network		
Ontical Cable/ Distance	Multi-mode: 850nm/ 0-550m(1G), 850nm/ 0-300m (10G), Single-mode:		
Optical Cable/ Distance	1310nm/ 0-40km, 1550nm/ 0-120km		
Chip Parameter			

Network Management Type	L2+		
	IEEE802.3 10BASE-T, IEEE802.3i 10Base-T, IEEE802.3u 100Base-TX		
Network Protocol	IEEE802.3ab 1000Base-T, IEEE802.3z 1000Base-X, IEEE802.3ae		
	10GBase-SR/LR, IEEE802.3x		
Forwarding Mode	Store and Forward (Full Wire Speed)		
Switching Capacity	128Gbps (non-blocking)		
Forwarding Rate@64byte	77.38Mpps		
CPU	800M		
DRAM	1G		
FLASH	128M		
MAC	16K		
Buffer Memory	12M		
Jumbo Frame	12K		
	System: SYS (Green), Network: Link (Yellow), PoE: PoE (Green), Fiber		
LED Indicator	port: L/A (Green)		
Reset Switch	Yes, press and hold the switch for 10 seconds and release it to restore the		
Reset Switch	factory settings		
PoE& Power Supply			
PoE Port	Port 1-8		
Do F Managament	Port PoE real-time load power display, Port PoE output on/off, PoE work		
PoE Management	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		
Physical Parameter			
Operation Temp/ Humidity	-40~+75°C, 5%~90% RH non condensing		

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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				
	IEC61000-4-3 (RS):10V/m (80-1000MHz)			
	FCC Part 15/CISPR22 (EN55022): Class A			
	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): CM2.5kV, DM1kV			
Lightning Protection	Protection level: IP40, Lightning protection: 6KV 8/20us			
	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			
Mask suisel Dusus suise	IEC60068-2-6 (Anti Vibration), IEC60068-2-27 (Anti Shock),			
Mechanical Properties	IEC60068-2-32 (Free Fall)			
Certification	CE mark, commercial, CE/LVD EN62368-1, FCC Part 15 Class A, RoHS			
Warranty	5 years, lifelong maintenance.			
Network Management Fea	iture			
	IEEE802.3x flow control (Full duplex)			
	Port exception protection mechanism			
Interface	Port real-time flow management (Flow Interval)			
ппспасс	Broadcast storm suppression based on port rate			
	Optical port SFP module DDMI real-time digital diagnosis			
	Port EEE Green Ethernet Energy-Saving configuration and status view			



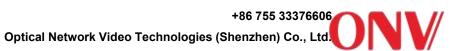
	Limit the rate of incoming and outgoing packet traffic, with mini granularity		
	of 16Kbps and max of 1Gbps		
	ARP protocol max 1024 entries		
L3 Feature	Static route, RIPv1/v2, RIPng, OSPFv1/v2, OSPFv3		
	L2+ network management function, IPV4/ IPV6 dual-stack management		
	Port configuration of Access, Trunk, Hybrid, IEEE 802.1q		
VLAN	Voice VLAN, GVRP VLAN protocol, Port-based VLAN (4K)		
	Protocol-based VLAN, MAC address-based VLAN, QinQ configuration		
Port Aggregation	LACP, Static aggregation, Max 8 aggregation groups and max 8 ports per		
T Off Aggregation	group.		
Spanning Tree	STP BPDU Guard, BPDU filtering and BPDU forwarding		
Spanning Tree	STP (IEEE802.1d), RSTP (IEEE802.1w), MSTP (IEEE802.1s)		
ERPS Ring Network ERPS, Recovery time less than 20ms, ITU-T G.8032			
	MLD Snooping, Multicast VLAN		
Multicast	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		
WillOffing	Supports 1-to-multiple mirroring, supports up to 4 port sessions		
	Flow-based rate limiting, Flow-based redirection		
QoS	Queue scheduling algorithm (SP, WRR, SP+WRR)		
QuS	Flow-based packet filtering, 8*Output queues of each port		
	802.1p/ DSCP priority mapping, Diff-Serv QoS, Priority mark/ remark		
	ACL distribution based on port and VLAN		
	L2-L4 packet filtering function, matching the first 80 bytes message, and		
ACL	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		
Occurry	SSL guarantees data transmission security		



	Quad binding function of IP+MAC+VLAN+ports	
	MAC address learning limit, MAC address black hole	
	IP Source Guard function, AAA& RADIUS certification	
	Anti DoS attack, Port broadcast message suppression	
	Hierarchical user management and password protection	
	SSH 2.0 provides a secure encrypted channel for user login	
	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	
	Web network management (https)	
	Link Layer Discovery Protocol (LLDP)	
	Viewing CPU Instant Utilization Status	
Management	NTP clock, One click restore, SNMP V1/V2/V3	
Management	Cable status check, Ping detection, System work log	
	ONV NMS platform cluster management (LLDP+SNMP)	
	Console/ AUX Modem/ Telnet/ CLI command line configuration	
	FTP, TFTP, Xmodem, SFTP file upload and download management	
	Web browser: Mozilla Firefox 2.5 or higher, Google Chrome V42 or higher,	
	Cat5 and above Ethernet cable	
System	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	Recommended
		Power Supply
ONV-IPS56168PFM-4TF	L2+ managed industrial PoE switch with	
	12*10/100/1000M RJ45 ports and 4*1/10G	
	uplink SFP+ fiber ports. Port 1-8 can support	12011/24011
	IEEE 802.3 af/at PoE standard. It can support	120W/240W
	dual DC redundant power input (Phoenix	
	terminal connection) and DIN rail mounting.	
	terminal connection) and DIN fall mounting.	

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

### **PACKING LIST**

	Content	Qty	Unit
Packing List	16-port 10G uplink 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
		Industrial SFP optical module, 1.25G multi-mode dual fiber	
	2630-G	850nm, transmission distance: 550m, LC interface, support	PC
1.25G		DDM function, support hot plug and pull.	
Optical		Industrial SFP optical module, 1.25G single-mode dual fiber	
Module	2632-G	1310nm, transmission distance: 20km, LC interface, support	PC
		DDM function, support hot plug and pull.	
	2612-T-G	Industrial SFP optical module, 1.25G single-mode single fiber	PC



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		TX1310nm/ RX1550nm, transmission distance: 20km, LC			
		interface, support DDM function, support hot plug and pull.			
		Industrial SFP optical module, 1.25G single-mode single fiber			
	2613-R-G	TX1550nm/ RX1310nm, transmission distance: 20km, LC	PC		
		interface, support DDM function, support hot plug and pull.			
		Industrial SFP optical module, 1.25G single-mode single fiber			
	2612-T-SC-G	TX1310nm/ RX1550nm, transmission distance: 20km, SC	PC		
		interface, support DDM function, support hot plug and pull.			
		Industrial SFP optical module, 1.25G single-mode single fiber			
	2613-R-SC-G	TX1550nm/ RX1310nm, transmission distance: 20km, SC	PC		
		interface, support DDM function, support hot plug and pull.			
		Industrial SFP+ optical module, 10G multi-mode dual fiber			
	6630-G	850nm, transmission distance: 300m, LC interface, support	PC		
		DDM function,support hot plug and pull.			
		Industrial SFP+ optical module, 10G single-mode dual fiber			
10G	7832-G	1310nm, transmission distance: 20km, LC interface, support	PC		
Optical		DDM function, support hot plug and pull.			
Module		Industrial SFP+ optical module, 10G single-mode single fiber			
Module	7832-33-G	TX1330nm/ RX1270nm, transmission distance: 20km, LC	PC		
		interface, support DDM function, support hot plug and pull.			
		Industrial SFP+ optical module, 10G single-mode single fiber			
	7832-27-G	TX1270nm/ RX1330nm, transmission distance: 20km, LC	PC		
		interface, support DDM function, support hot plug and pull.			

### **POWER SUPPLY**

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

### **CONTACT US**

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