

Product Datasheet

28-port 10G Uplink L3 Managed Industrial PoE Fiber

Switch

(ONV-IPS58028PFM)



OVERVIEW

The ONV-IPS58028PFM is a 10G uplink L3 managed industrial PoE fiber switch independently developed by ONV. It has 24*10/100/1000Base-T adaptive RJ45 ports and 4*1/10G SFP+ fiber ports. Port 1-24 can support IEEE 802.3af/at PoE standard. 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-IPS58028PFM has L3 network management function, supports IPV4/ IPV6 management, dynamic/ static routing and forwarding, complete security protection mechanism, perfect ACL/ QoS policy, and rich VLAN functions for easy management and maintenance. It supports multiple network redundancy protocols STP/ RSTP/ MSTP

(<50ms) and (ITU-T G.8032) ERPS (<20ms) to improve link backup and network reliability. When the one-way network fails, the communication can be quickly restored to ensure the uninterrupted communication of important applications. According to actual application needs, PoE power supply management, port management, routing address management, port flow control, VLAN division, IGMP, security policy, and other application service configurations are performed through Web, CLI, SNMP, Telnet, and other network management methods.

FEATURE

■ Gigabit access, 10G uplink

- ◇ Support non-blocking wire-speed forwarding.
- ◇ Support full-duplex based on IEEE802.3x and half-duplex based on Backpressure.
- ◇ Support Gigabit Ethernet port and 10G SFP+ uplink port combination, which enables users to flexibly build networking to meet the needs of various scenarios.

■ Intelligent 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.
- ◇ 24*10/100/1000Base-T RJ45 ports, meeting the needs of security monitoring, teleconferencing system, wireless coverage, and other scenarios.
- ◇ Priority system for PoE port, it will supply power to the high priority level port first when the power budget is insufficient and avoid overwork of the device.

■ Security

- ◇ Support port isolation.
- ◇ Support port broadcast storm suppression.

- ◇ Support IP+MAC+port+VLAN quadruple flexible combination binding function.
- ◇ Support 802.1X authentication to provide authentication functions for LAN computers, and control 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 SnoopingV1/V2/V3 multicast protocol IGMP to meet the 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, PoE.
- ◇ Using self-developed power supply, redundant dual power supply provides long-term stable PoE power output.
- ◇ Low power consumption, galvanized steel casing. with fan, excellent heat dissipation to ensure the stable operation of the switch.

■ Easy O&M management

- ◇ Support NMS platform cluster management.
- ◇ Support CPU monitoring, memory monitoring, Ping detection, cable length detection.
- ◇ Support HTTPS, SSLV3, SSHV1/V2 and other encryption methods, making management more secure.
- ◇ Support RMON, system log, and port traffic statistics to facilitate network optimization and transformation.
- ◇ Support LLDP to facilitate the network management system to query and judge the communication status of the link.
- ◇ Support Web network management, CLI command line (Console, Telnet), SNMP (V1/V2/V3) and other diversified management and maintenance.

TECHNICAL SPECIFICATION

Model	ONV-IPS58028PFM	ONV-IPS58028PFM-at
Interface Characteristics		
Fixed Port	2*AC100-240V input ports Alarm switch port (FAULT) 1*Console port (115200, N, 8,1) 4*1/10G uplink SFP+ ports (Data) 24*10/100/1000Base-T PoE ports (Data/Power) 1 group of DC48-57V input ports (Support reverse polarity protection function)	
Ethernet Port	Port 1-24 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) 100BASE-TX: Cat5 or later UTP(≤100 meters) 1000BASE-T: Cat5e/6 or later UTP(≤100 meters)	
Optical Fiber Port	Gigabit SFP optical fiber port and 10G SFP+ optical fiber port, default no	

	include optical modules (optional single-mode/ multi-mode, single fiber/ dual fiber optical module. LC)
Optical Fiber Port Expansion	Support Turbo overclocking 2.5G optical module expansion and ring network
Optical Cable/ Distance	Multi-mode: 850nm/ 0-500m, 850nm/ 0-300m(10G), Single-mode: 1310nm/ 0-40km, 1550nm/ 0-120km.
Chip Parameter	
Network Management Type	L3
Network Protocol	IEEE802.3 10BASE-T, IEEE802.3i 10Base-T, IEEE802.3u 100Base-TX IEEE802.3ab 1000Base-T, IEEE802.3z 1000Base-X IEEE802.3ae 10GBase-LR/SR, IEEE802.3x
Forwarding Mode	Store and Forward(Full Wire Speed)
Switching Capacity	128Gbps
Forwarding Rate@64byte	95.23Mpps
CPU	800MHz
DRAM	1GB
FLASH	128MB
MAC	16K
Buffer Memory	12MB
Jumbo Frame	12KB
LED Indicator	Power: PWR(Yellow), System: SYS (Yellow), 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 to 24 IEEE 802.3 af/at

PoE Management	PoE working status display, Port 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	2*400W (AC100-240V)	2*600W (AC100-240V)
Power Consumption	Standby<20W, Full Load<380W	Standby<22W, Full Load<600W
Power Supply	Built-in power supply, AC 100~240V 50-60Hz 5.0A	Built-in power supply, AC 100~240V 50-60Hz 6.6A
Power Input Port	1 group of DC48-57V input ports Alarm switch port, 1 group of AC power input ports Dual input power port: AC power supply priority, support anti-reverse protection, power-off automatic switching DC connection.	
Physical Parameter		
Operation TEMP / Humidity	-40°C~+75°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	<6.0kg / <6.3kg	<6.5kg / <6.8kg
Installation	Desktop, 19 inch 1U 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	

	<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 to 3s</p> <p>IEC61000-4-5 (Surge): Power cable: CM±4kV/ DM±2kV, Data cable: ±4kV</p>
Mechanical	IEC60068-2-6 (Anti vibration)
Properties	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.

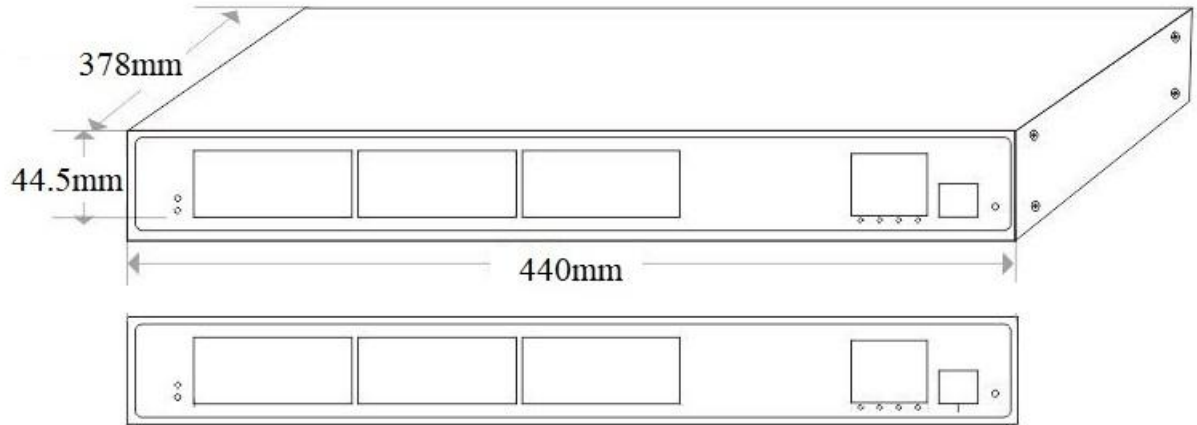
Network Management Features

Interface	<p>IEEE802.3x 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>Limit the rate of incoming and outgoing packet traffic, with min granularity of 16Kbps and max 1Gbps</p> <p>Port EEE Green Ethernet Energy-Saving configuration and status view</p> <p>Jumbo frame configuration, the largest 12000byte</p>
Layer 3 Features	<p>IPV4 Equal Cost Routing</p> <p>NG protocol, max 1000 entries</p> <p>ARP protocol, max1000 entries</p> <p>Pingv6, Telnetv6, TFTPv6, DNSv6, ICMPv6</p> <p>IPV4/IPV6 VRRP, the max group is 255</p> <p>IPV4/IPV6 VLANIF interface supports up to 128</p>

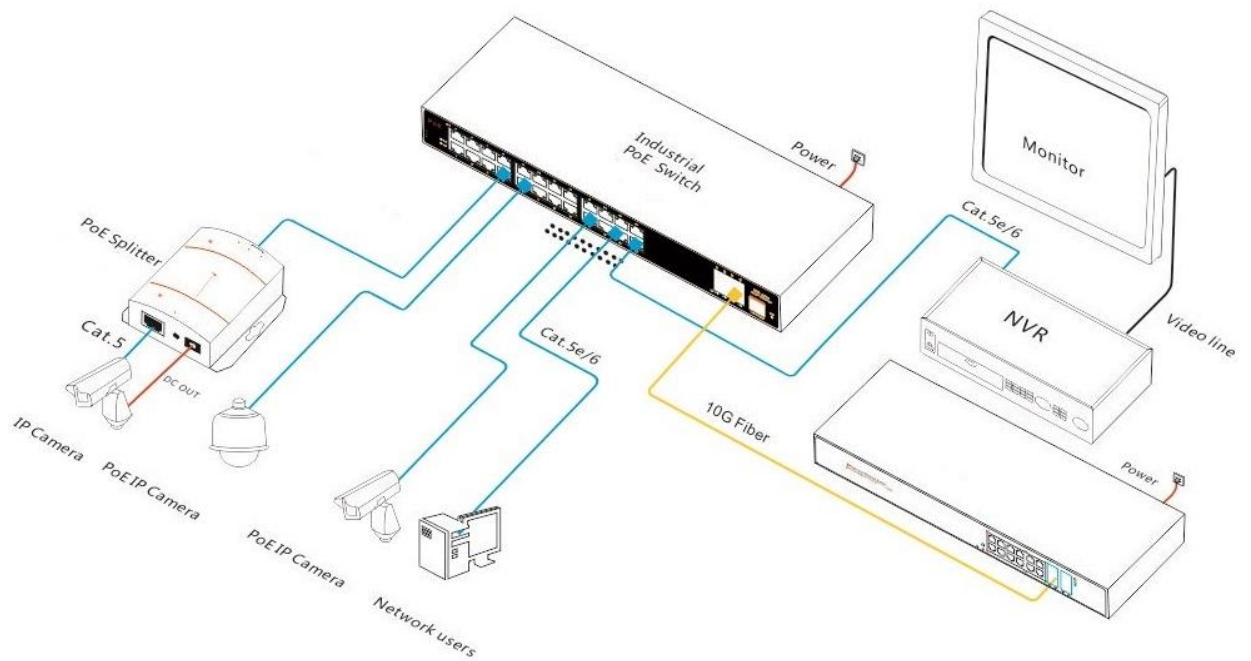
	<p>IPV4/IPV6 static route/ default route supports up to 128 entries</p> <p>L3 network management function, IPV4/ IPV6 dual-stack management</p> <p>IPV4 dynamic routing, RIPv1/v2, OSPFv2, BGP4+, 4000 routing entries</p> <p>IPV6 dynamic routing OSPFv3, BGP+, RIPv6, IPV6 management, 1000 routing entries</p> <p>L3 routing and forwarding, support communication between different network segments and different VLAN</p>
VLAN	<p>VLAN based on MAC, VLAN based on the protocol</p> <p>Port configuration of Access, Trunk, Hybrid. GVRP VLAN protocol</p> <p>(4K) VLAN based on port, IEEE802.1q, Voice VLAN, QinQ configuration</p>
Port Aggregation	<p>LACP dynamic aggregation, Static aggregation</p> <p>Max 14 aggregation groups and max 8 ports per group.</p>
Spanning Tree	<p>STP BPDU Guard, BPDU filtering and BPDU forwarding</p> <p>STP (IEEE802.1d), RSTP (IEEE802.1w), MSTP (IEEE802.1s)</p>
ERPS Ring Network	<p>Support ERPS ring network, ring network self-healing time is less than 20ms, ITU-T G.8032</p>
Multicast	<p>MLD Snooping, IGMP Snooping, Multicast VLAN</p> <p>User quick log out, MVR (Multicast VLAN registration)</p> <p>IGMP Snooping v1/v2/v3 and 1024 multicast groups at most</p>
Mirroring	<p>Bidirectional traffic mirroring for basic ports</p> <p>Supports 1-to-multiple mirroring, supports up to 4 port sessions</p>
QoS	<p>Queue scheduling algorithm (SP, WRR, SP+WRR)</p> <p>Flow-based rate limiting, Stream based redirection</p> <p>Flow-based packet filtering, 8*Output queues of each port</p> <p>802.1p/DSCP priority mapping, Diff-Serv QoS, Priority mark/ remark</p>
ACL	<p>ACL distribution based on port and VLAN</p> <p>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</p>

	type, TCP/UDP port, TCP/UDP port range, VLAN, etc.
Security	<p>Port based IEEE802.1X authentication</p> <p>SSL guarantees data transmission security</p> <p>Quad binding function of IP+MAC+VLAN+ports</p> <p>MAC address learning limit, MAC address black hole</p> <p>Anti DoS attack, Port broadcast message suppression</p> <p>IP Source Guard function, AAA& RADIUS certification</p> <p>Hierarchical user management and password protection</p> <p>SSH 2.0 provides a secure encrypted channel for user login</p> <p>Host data backup mechanism, ARP intrusion detection function</p> <p>Port isolation, IP Source Guard, ARP message speed limit function</p>
DHCP	DHCP Client, DHCP Snooping, DHCP Server
Management	<p>Web network management (https)</p> <p>Link Layer Discovery Protocol(LLDP)</p> <p>Viewing CPU Instant Utilization Status</p> <p>NTP clock, One click restore, SNMP V1/V2/V3</p> <p>Cable status check, Ping detection, System work log</p> <p>ONV NMS platform cluster management (LLDP+SNMP)</p> <p>Console/ AUX Modem/ Telnet/ CLI command line configuration</p> <p>FTP, TFTP, Xmodem, SFTP file upload and download management</p>
System	<p>Category 5 Ethernet network cable</p> <p>Web browser: Mozilla Firefox 2.5 or higher, Google browser chrome V42 or higher, Microsoft Internet Explorer10 or later</p> <p>TCP/IP, network adapter, and network operating system (such as Microsoft Windows, Linux, or Mac OS X) installed on each computer in a network</p>

DIMENSION



APPLICATION



ORDERING INFORMATION

Model	Description	Configure Power Supply
ONV-IPS58028PFM	L3 managed industrial PoE fiber switch with 24*10/100/1000M RJ45 ports and 4*1/10G SFP+ ports. Port 1-24 support IEEE 802.3 af/at PoE standard. Built-in redundant dual power supply and support 1U/19-inch cabinet mount.	2*400W
ONV-IPS58028PFM-at		2*600W

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

PACKING LIST

	Content	Qty	Unit
Packing List	28-port 10G uplink L3 managed industrial PoE fiber 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	2630-G	Industrial SFP optical module, 1.25G, multi-mode dual fiber 850nm, transmission distance: 550m, LC interface, support	PC

Module		DDM function, support hot plug and pull.	
	2632-G	Industrial SFP optical module, 1.25G, single-mode dual fiber 1310nm, transmission distance: 20km, LC interface, support DDM function, support hot plug and pull.	PC
	2612-T-G	Industrial SFP optical module, 1.25G, single-mode single fiber TX1310nm/ RX1550nm, transmission distance: 20km, LC interface, support DDM function, support hot plug and pull.	PC
	2613-R-G	Industrial SFP optical module, 1.25G, single-mode single fiber TX1550nm/ RX1310nm, transmission distance: 20km, LC interface, support DDM function, support hot plug and pull.	PC
	2612-T-G-SC	Industrial SFP optical module, 1.25G, single-mode single fiber TX1310nm/ RX1550nm, transmission distance: 20km, SC interface, support DDM function, support hot plug and pull.	PC
	2613-R-G-SC	Industrial SFP optical module, 1.25G, single-mode single fiber TX1550nm/ RX1310nm, transmission distance: 20km, SC interface, support DDM function, support hot plug and pull.	PC
10G Optical Module	6630-G	Industrial SFP+ optical module, 10G, multi-mode dual fiber 850nm, transmission distance: 300m, LC interface, support DDM function, support hot plug and pull.	PC
	7832-G	Industrial SFP+ optical module, 10G, single-mode dual fiber 1310nm, transmission distance: 20km, LC interface, support DDM function, support hot plug and pull.	PC
	7832-33-G	Industrial SFP+ optical module, 10G, single-mode single fiber TX1330nm/ RX1270nm, transmission distance: 20km, LC interface, support DDM function, support hot plug and pull.	PC
	7832-27-G	Industrial SFP+ optical module, 10G, single-mode single fiber TX1270nm/ RX13300nm, transmission distance: 20km, LC interface, support DDM function, support hot plug and pull.	PC

RELATED PRODUCT

Model	Description
ONV-IPS58036PFM	L3 managed industrial PoE fiber switch with 24*10/100/1000M RJ45 ports and 8*100/1000M SFP combo ports and 4*1/10G SFP+ ports. Port 1-24 support IEEE 802.3 af/at PoE standard. It support 2AC+DC redundant power terminal input and 1U/19-inch cabinet mount.
ONV-IPS58052PFM	L3 managed industrial PoE fiber switch with 48*10/100/1000M RJ45 ports and 4*1/10G SFP+ ports. Port 1-48 support IEEE 802.3 af/at PoE standard. It support 2AC+DC redundant power terminal input and 1U/19-inch cabinet mount.

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