Product Datasheet

28-port 10G Uplink Managed Industrial PoE Switch
(ONV-IPS56028PFM)

OVERVIEW

The ONV-IPS56028PFM is a 10G uplink managed industrial PoE switch independently developed by ONV. It has 24*10/100/1000Base-T adaptive RJ45 ports and 4*1/10G uplink SFP+ fiber ports. Port 1-24 can support IEEE 802.3 af/at PoE standard, and the single-port PoE power reaches 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 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-IPS56028PFM has L2+ network management function, supports IPV4/ IPV6 management, static routing 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

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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 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, uplink 1/10G SFP+ fiber port

◇ Support non-blocking wire-speed forwarding.

◇ Support full-duplex based on IEEE802.3x and half-duplex based on Backpressure.

◇ Support Gigabit RJ45 port and uplink 1/10G 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.

◇ 24*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.

■ 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

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controls 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.

◇ Self-developed power supply, high redundancy, providing a long-term and stable PoE power output.

◇ The user-friendly panel can show the device status through the LED indicator of PWR, SYS, Link, and PoE.

◇ Low power consumption, with fan, galvanized steel metal housing, and excellent heat dissipation to ensure stable operation of the switch.

■ Easy O&M management

◇ Support NMS platform cluster management.

◇ Support CPU monitoring, memory monitoring, Ping detection, and cable length detection.

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◇ Support RMON, system log, and port traffic statistics to facilitate network optimization and transformation.

◇ Support HTTPS, SSLV3, SSHV1/V2, and other encryption methods, making management more secure.

◇ 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

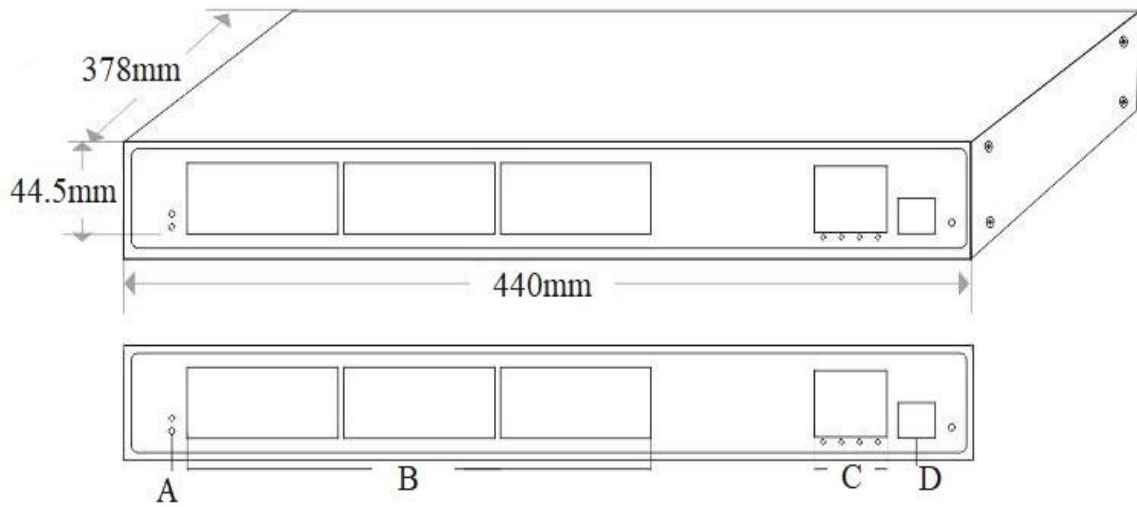| Model	ONV-IPS56028PFM	ONV-IPS56028PFM-at
Interface Characteristics		
Fixed Port	Alarm switch port (FAULT) 2*AC100-240V input ports 1*Console RS232 port (115200, N, 8,1) 4*1/10G uplink SFP+ fiber ports (Data) 24*10/100/1000Base-T PoE ports (Data/ Power) 2*DC48-57V input ports (support reverse polarity protection)	
Ethernet Port	Port 1-24 can 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	1/10G SFP+ optical fiber port, default no include optical module (optional single-mode/ multi-mode, single fiber/ dual fiber optical module. LC)	
Optical Fiber Port Expansion	Turbo overclocking 2.5G optical module expansion and ring network	
Optical Cable/ Distance	Multi-mode: 850nm/ 0~550m (1.25G), 850nm/ 0~300m(10G), Single-mode:	

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	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 802.3ae 10GBase-SR/LR, IEEE 802.3x	
Forwarding Mode	Store and Forward (Full wire speed)	
Switching Capacity	128Gbps (non-blocking)	
Forwarding Rate@64byte	95.23Mpps	
CPU(Hz)	800M	
DRAM	1G	
FLASH	128M	
MAC	16K	
Buffer Memory	12M	
Jumbo Frame	12K	
LED Indicator	System: SYS (Yellow), PoE: PoE (Green), Network: Link (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 1-24	
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, AC100~240V 50-60Hz, 5.0A	Built-in power supply, AC100~240V 50-60Hz 6.6A

| 6 | Alarm switch port, 2*AC power input ports, 2*DC48-57V input ports |
| Power Input Port | 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~+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	5.4kg/ 6.2kg	6.2kg /7.0kg
Installation	Desktop, 1U/19" cabinet	

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: IP30, 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
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.

Network Management Feature

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| Interface | Port real-time flow management (Flow Interval) |
	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
	IEEE 802.3x flow control (Full duplex), Port exception protection mechanism
	Limit the rate of incoming and outgoing packet traffic, mini granularity is16Kbps and max is 1Gbps
L3 Feature	ARP protocol max 1024 entries
	Static route, RIPv1/v2, RIPng, OSPFv1/v2, OSPFv3
	L2+ network management function, IPV4/ IPV6 dual-stack management
VLAN	Port configuration of Access, Trunk, Hybrid, IEEE 802.1q
	Voice VLAN, GVRP VLAN protocol, Port-based VLAN (4K)
	Protocol-based VLAN, MAC address-based VLAN, QinQ configuration
Port Aggregation	LACP dynamic aggregation, Static aggregation, Max 14 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	ERPS, Recovery time 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
	Supports 1-to-multiple mirroring, supports up to 4 port sessions
QoS	Flow-based rate limiting, Flow-based redirection
	Queue scheduling algorithm (SP, WRR, SP+WRR)
	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
	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 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
Management	Link Layer Discovery Protocol (LLDP) NTP clock, Web network management (https) FTP, TFTP file upload and download management Console/ Telnet/ CLI/ SSH command line configuration ONV NMS platform cluster management (LLDP+SNMP) One click restore, Viewing CPU Instant Utilization Status SNMP V1/V2/V3, Cable status check, Ping detection, System work log
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

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DIMENSION

378mm

44.5mm

440mm

A B C D

A. Work indicator   B. 24*10/100/1000M PoE ports
C. 4*1/10G SFP+ fiber ports   D. Console port

APPLICATION

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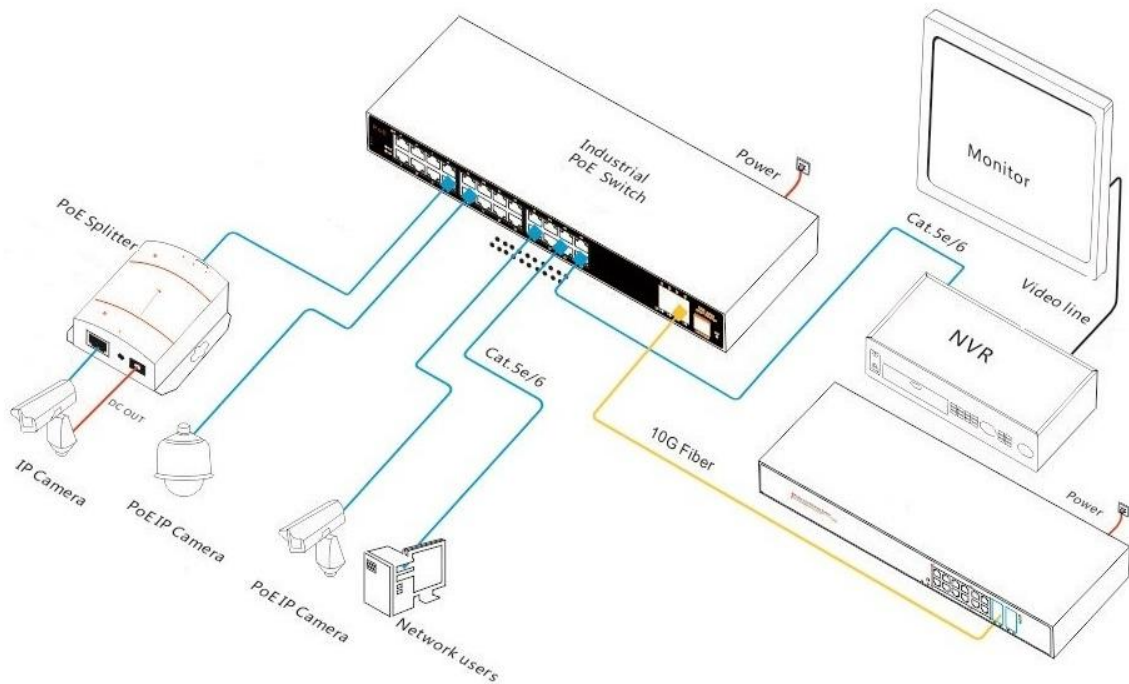
ORDERING INFORMATION

Model	Description	Built-in Power Supply
ONV-IPS56028PFM	L2+ managed industrial PoE switch with 24*10/100/1000M RJ45 ports and 4*1/10G uplink SFP+ fiber ports. Port 1-24 can support IEEE 802.3 af/at PoE standard. It built-in redundant dual power supply and standard 1U/19" cabinet installation.	2*400W
ONV-IPS56028PFM-at		2*600W

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

PACKING LIST

	Content	Qty	Unit
Packing List	28-port 10G uplink managed industrial PoE switch	1	Set
	RJ45-DB9 Adapter Cable	1	PC
	AC Power Cable	1	PC
	Mounting Kits (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	PC

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		DDM function and hot plugging.	
	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-G-SC	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-G-SC	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 Optical 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

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RELATED PRODUCT

Model	Description
ONV-IPS56036PFM	L2+ managed industrial PoE switch with 24*10/100/1000M RJ45 ports and 8*100/1000M SFP fiber combo ports and 4*1/10G uplink SFP+ fiber ports. Port 1-24 can support IEEE 802.3 af/at PoE standard. It can support 2AC+DC redundant power supply input and standard 1U/19" cabinet installation.
ONV-IPS56052PFM	L2+ managed industrial PoE switch with 48*10/100/1000M RJ45 ports and 4*1/10G uplink SFP+ fiber ports. Port 1-48 can support IEEE 802.3 af/at PoE standard. It can support 2AC+DC redundant power supply input and standard 1U/19" cabinet installation.

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