Product Datasheet

28-port 10G Uplink Managed Industrial PoE Switch
(ONV-IPS38028PFM)

OVERVIEW

The ONV-IPS38028PFM 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 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 sensor 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-IPS38028PFM has L3 network management function, supports IPV4/IPV6 management, dynamic routing full line-speed forwarding, complete security protection mechanism, perfect ACL/QoS strategy, and rich VLAN functions for easy management and maintenance. It has leading ring network technology, supports a variety of industrial-grade redundant ring network protocols, and all ports can form rings. It supports chain, star, double star, ring, tangent ring, intersecting ring, coupled ring, and the ring network recovery time within 20ms. It has high reliability, high security, and high manageability to ensure reliable transmission of key data. It supports remote management and cooperates with the ONV-NMS network management platform for

+86 755 33376606

Optical Network Video Technologies (Shenzhen) Co., Ltd.

ONV

cluster management to achieve full-process blind spot network management.

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 controls the authorization status of controlled ports according to the authentication results.

■ **Strong business processing capability**

◇ Support industrial ERPS ring network and STP/ RSTP/ MSTP to eliminate layer 2

+86 755 33376606

Optical Network Video Technologies (Shenzhen) Co., Ltd. ONV

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.

■ **Stable and reliable**

◇ CCC, CE, FCC, RoHS.

◇ Self-developed power supply, high redundancy design, 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, L/A, 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 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.

+86 755 33376606

Optical Network Video Technologies (Shenzhen) Co., Ltd. ONV

◇ 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-IPS38028PFM	ONV-IPS38028PFM-at
Interface Characteristics		
Fixed Port	2*AC100-240V input ports 1*Console 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 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, 850nm/ 0-300m(10G), Single-mode: 1310nm/ 0-40km, 1550nm/ 0-120km	
Chip Parameter		
Network Management Type	L3	
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	176Gbps (non-blocking)
Forwarding Rate@64byte	95.23Mpps
CPU	500MHz
DRAM	2G
FLASH	128M
MAC	32K
Buffer Memory	32M
Jumbo Frame	9.6K
LED Indicator	PoE: PoE (Green), Fiber port: L/A (Green), System: SYS (Green), Network: Link (Yellow)
Reset Switch	Yes, press and hold the switch for 10 seconds and release it to restore the factory settings

PoE & Power Supply

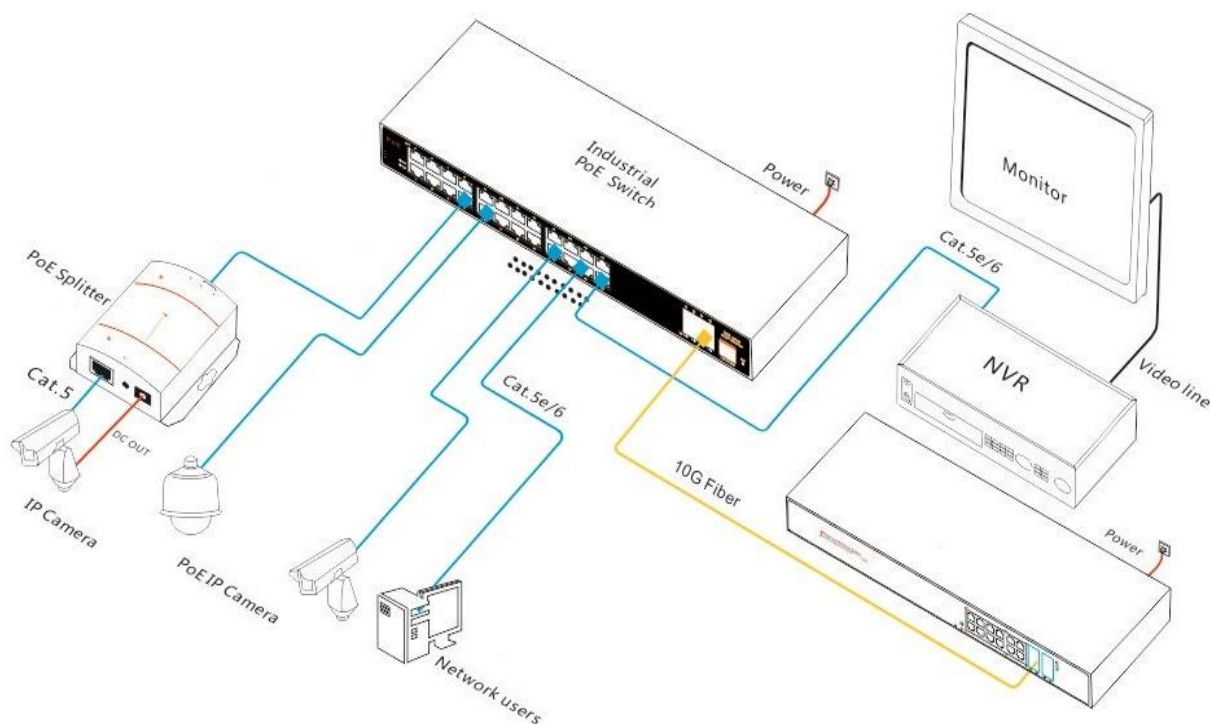|		
PoE Port	Port 1-24	
PoE Management	PoE power supply total power limit configuration Power delay start, PoE work and time scheduling Port PoE working status display, Port PoE output priority configuration Port PoE output power distribution, PoE on/off, af/at power distribution	
Power Supply Pin	1/2(+) 3/6 (-)	
Max Power Per Port	30W, IEEE 802.3 af/at	
Power Consumption	Standby<25W, Full Load<400W	Standby<30W, 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
Power Input Port	Alarm switch port, 2*AC power input ports, 2*DC48-57V input ports 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

+86 755 33376606

Optical Network Video Technologies (Shenzhen) Co., Ltd. ONV

Operation Temp/ Humidity	-40~+80°C, 5%~90% RH Non condensing	
Storage Temp/ Humidity	-40~+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

Lightning Protection	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): CM 2.5kV, DM 1kV 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,1-3s 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 A, RoHS
Warranty	5 years, lifelong maintenance.

Network Management Feature

Interface	IEEE802.3X (Full-duplex) Port temperature protection setting No connection port automatic sleep Port green Ethernet Energy-saving setting

+86 755 33376606

Optical Network Video Technologies (Shenzhen) Co., Ltd. ONV

7	Broadcast storm control based on port speed
	SFP+ optical port DDMI real-time digital diagnosis
	The speed limit of the message flow in the access port, mini particle size is 64Kbps.
L3 Routing	IPV4 Equal Cost Routing
	NG protocol max 1000 entries
	ARP protocol max 1000 entries
	IPV4/IPV6 VRRP max group is 255
	Pingv6, Telnetv6, TFTPv6, DNSv6, ICMPv6
	IPV4/IPV6 VLANIF interface supports up to 128
	IPV4/IPV6 static route/ default route supports up to 128 entries
	L3 network management function, IPV4/IPV6 dual-stack management
	IPV4 dynamic routing, RIPv1/v2, OSPFv2, BGP4+, 4000 routing entries
	IPV6 dynamic routing OSPFv3, BGP+, RIPng, IPV6 management, 1000 routing entries
	L3 routing and forwarding, support communication between different network segments and different VLAN
VLAN	Voice VLAN, QinQ configuration, IEEE802.1q
	VLAN based on MAC, VLAN based on the protocol
	4K VLAN based on port, Port configuration of Access, Trunk, Hybrid.
Port Aggregation	LACP dynamic aggregation, static aggregation
	Max 14 aggregation groups and 8 ports per group.
Spanning Tree	STP (IEEE802.1d), RSTP (IEEE802.1w), MSTP (IEEE802.1s)
Ring Network Protocol	G.8032 (ERPS), Recovery time less than 20ms. 250 Ring at most, Max 250 devices per ring.
Multicast	MLD Snooping, Multicast VLAN, Fast log out, IGMP Snooping v1/v2, Max 1024 multicast groups
Port Mirroring	Bidirectional data mirroring based on port
QoS	Flow-based redirection, Flow-based rate limiting

+86 755 33376606

Optical Network Video Technologies (Shenzhen) Co., Ltd. ONV
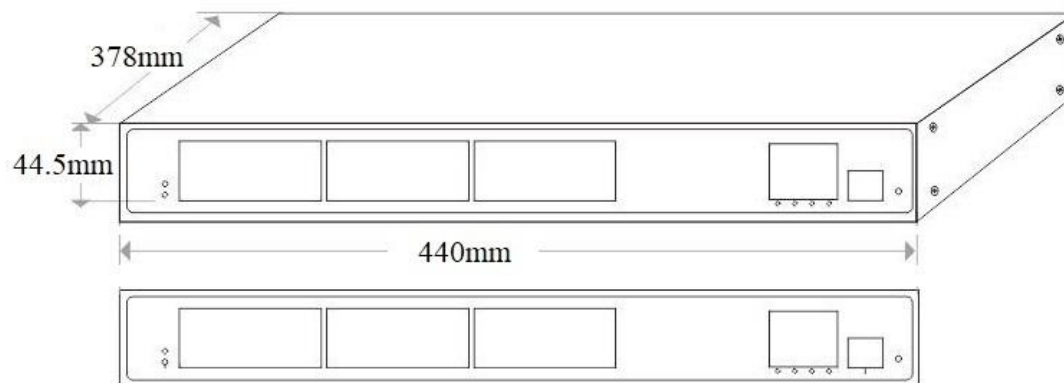
8	Flow-based packet filtering, Priority Mark/Remark
	8*Output queues of each port, 802.1p/ DSCP priority mapping
	Queue Scheduling Algorithm (SP, WRR, SP+WRR), Diff-Serv QoS
ACL	Port-based Issuing ACL, ACL based on port and VLAN
	L2 to L4 packet filtering, matching first 80 bytes message. Provide ACL based on MAC, Destination MAC address, IP Source, Destination IP, IP Protocol Type, TCP/UDP Port, TCP/UDP Port Range, and VLAN, etc.
Security	ARP message rate limiting function
	Port broadcast message suppression
	SSL ensures data transmission security
	AAA& RADIUS& TACACS+ certification
	Limit the number of MAC addresses learned
	Port isolation, Host data backup mechanism
	Anti-DoS attack, ARP intrusion detection function
	Quadruple binding function of IP+MAC+VLAN+port
	IP source address protection, MAC address black hole
	User hierarchical management and password protection
	SSH 2.0 provides a secure encrypted channel for user login
	IEEE802.1X authentication/ centralized MAC address authentication
DHCP	DHCP Client, DHCP Snooping, DHCP Server, DHCP Relay
Management	System work log, Link Layer Discovery Protocol
	NTP clock, Cable length detection, SNMP V1/V2/V3
	Ping detection, Web network management (HTTPS)
	ONV-NMS platform cluster management (LLDP+SNMP)
	One click recovery, View CPU real-time utilization status
	FTP, TFTP, Xmodem, SFTP file upload and download management
	Console/ AUX Modem/ Telnet/ SSH2.0 CLI command line configuration
System	Web browser: Mozilla Firefox 2.5 or higher, Google Chrome V42 or higher, Cat5 and above Ethernet cable

+86 755 33376606

Optical Network Video Technologies (Shenzhen) Co., Ltd. ONV

	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
9	

APPLICATION

DIMENSION

ORDERING INFORMATION

Model	Description	Built-in Power Supply
ONV-IPS38028PFM	L3 managed industrial PoE switch with 4*1/10G uplink SFP+ fiber ports and 24*10/100/1000M RJ45 ports.	400W
ONV-IPS38028PFM-at	Port 1-24 can support IEEE 802.3 af/at PoE standard. It built-in power supply and 1U/19" cabinet installation.	600W

Note: The optical module is not included need 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 DDM function and hot plugging.	PC

11	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 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

RELATED PRODUCT

Model	Description
ONV-IPS33018PFM	L2+ managed industrial PoE switch with 16*10/100/1000M RJ45 ports and 2*100/1000M uplink SFP fiber ports. Port 1-16 can support IEEE 802.3 af/at PoE standard. It built-in power supply and 1U/19" cabinet installation.
ONV-IPS33026PFM	L2+ managed industrial PoE switch with 24*10/100/1000M RJ45 ports and 4*100/1000M uplink SFP fiber ports (combo port). Port 1-24 can support IEEE 802.3 af/at PoE standard. It built-in power supply and 1U/19" cabinet installation.
ONV-IPS38036PFM	L3 managed industrial PoE switch with 24*10/100/1000M RJ45 ports and 8*100/1000M SFP fiber ports and 4*1/10G uplink SFP+ fiber ports. Port 1-24 can support IEEE 802.3 af/at PoE standard. It built-in power supply and 1U/19" cabinet installation.
ONV-IPS38048PFM	L3 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 built-in power supply and 1U/19" cabinet installation.

CONTACT US

ONV Optical Network Video Technologies (Shenzhen) Co., Ltd.

Tel: 0086-755-33376606

Fax: 0086-755-33376608

WeChat: ONV-PoE-IoT

Email: onv@onv.com.cn

Skype: onv@onv.com.cn

Website: www.onvcom.com

Headquarter Address: Room 1003, Block D, Terra Building, Futian District, Shenzhen

+86 755 33376606

Optical Network Video Technologies (Shenzhen) Co., Ltd. **ONV**

Factory Address: Building B3, Galaxy Artificial Intelligence Industrial Park, No. 333,

Zhongkai 6th Road, Chenjiang Street, Zhongkai High-tech Zone, Huizhou

+86 755 33376606

Optical Network Video Technologies (Shenzhen) Co., Ltd. ONV