Product Datasheet

16-Port 10G Uplink Managed Industrial PoE Switch

(ONV-IPS36168PFM)

OVERVIEW

The ONV-IPS36168PFM is a 10G uplink managed industrial PoE fiber switch independently developed by ONV. it has 12*10/100/1000Base-T RJ45 ports and 4*1/10G SFP+ fiber slot ports. Port 1-8 can support IEEE 802.3af/at standard POE, single port POE power up to 30W, and the maximum POE output power of the whole machine is 120W(at-240W). 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, web camera, VoIP phone, industrial sensor through network cable, and meet the network environment that needs high-density PoE power supply. It is suitable for intelligent transportation, rail transit, electric power, mining, metallurgy and green energy. Industrial scenes such as construction set up a cost-effective and stable communication network.

The ONV-IPS36168PFM has L2+ full network management, supports IPV4/IPV6 management, static route full line rate forwarding, security protection mechanism, ACL/QoS policy and VLAN, and is easy to manage and maintain. It has the leading ring network technology, supporting a variety of industrial redundant redundant ring network

protocol, any port can be a ring, support chain type, star type, double star type, ring type, tangent ring, intersecting ring, coupling ring, ring network 20ms self healing. It has high reliability, security and manageability, ensure reliable transmission of key data, support remote management, and can manage cluster management with ONV-NMS network management platform. ONV-IPS36168PFM industrial series products fully follow industrial product design and material. The casing uses aluminum alloy to enhance heat dissipation. It has excellent industrial field environment adaptability (including mechanical stability, climate and environment adaptability, electromagnetic environment adaptability, etc.), Protection level is IP40, support dual power supply, low power consumption no fan heat dissipation technology, MTBF average fault free working time can reach 35 years, 5 years warranty.

FEATURE

■ Full gigabit port ,10G uplink

◇ All series supports Ethernet port and 10G SFP+ port combination, which enables users to flexibly build networking to meet the needs of various scenarios.

◇ Support non-blocking wire-speed forwarding.

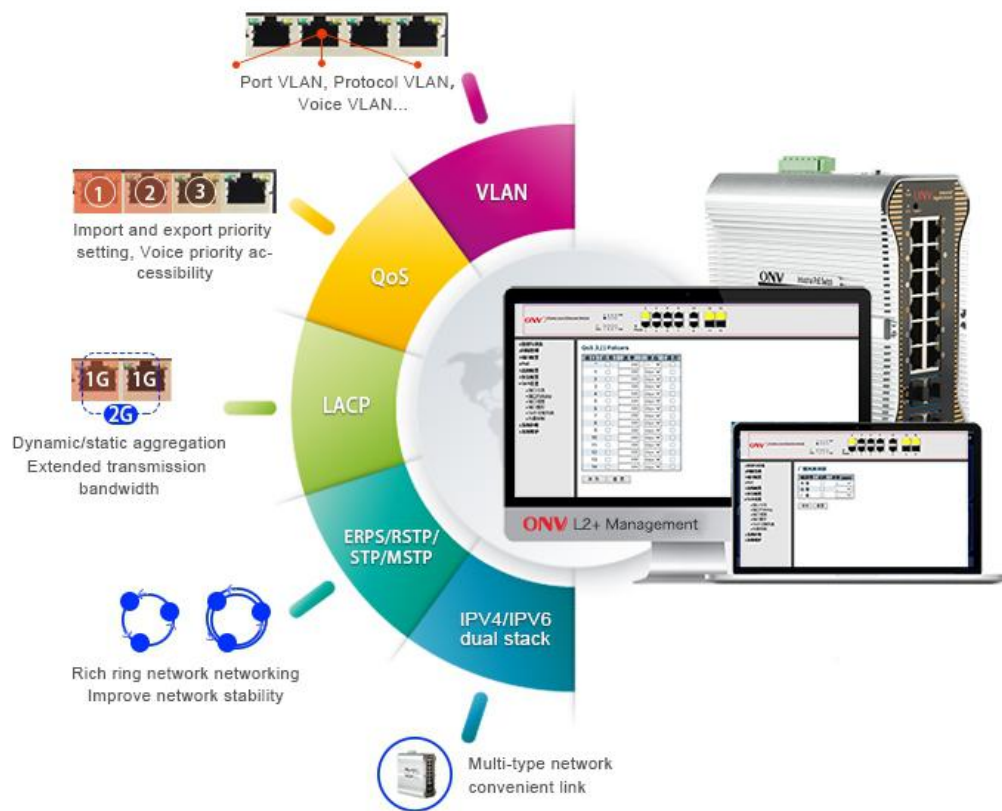◇ Support full-duplex based on IEEE802.3x and half-duplex based on backpressure.

■ **Intelligent PoE power supply**

◇ 8*10/100/1000Base-T RJ45 ports, meeting the needs of security monitoring, teleconferencing system, wireless coverage, and other scenarios.

◇ IEEE 802.3af/at PoE standard, without damaging non-PoE devices.

◇ PoE network management, realize PoE port power allocation, priority setting, port power status viewing, time scheduling, etc.
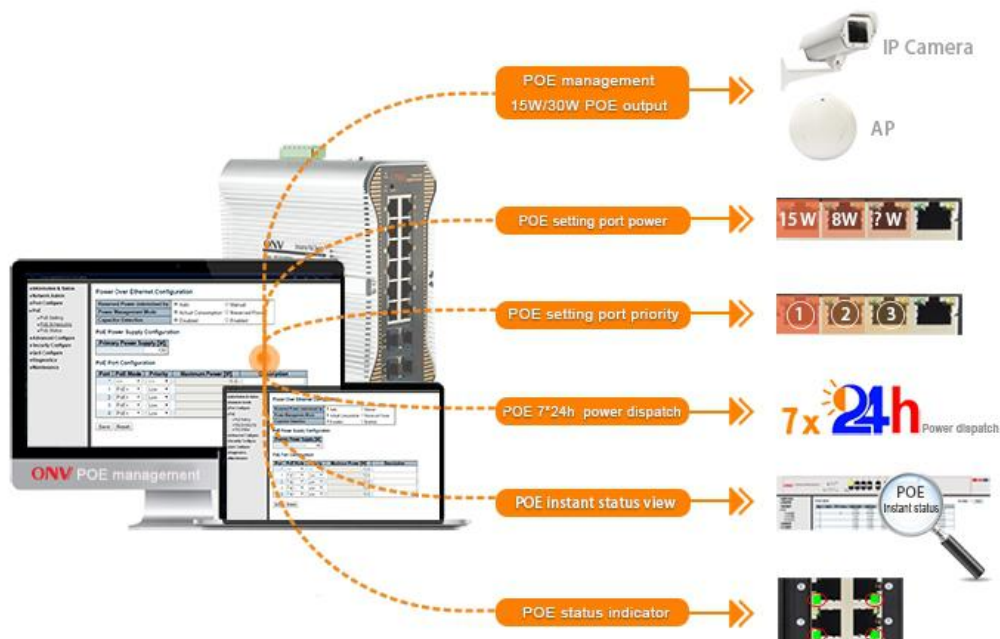
■ **Strong business processing capability**

◇ IEEE802.1Q VLAN, flexible VLAN division,Voice VLAN and QinQ configuration.

◇ QoS, Priority mode based on 802.1P, Port & DSCP, queue scheduling algorithm including Equ, SP, WRR & SP+WRR.

◇ ALC, filter data packet through configuring matching rules, processing operation & time permission, and provide flexible and safe access control.

◇ IGMP V1/V2 and IGMP Snooping.

◇ ERPS/STP/RSTP/MSTP.

◇ Static and dynamic aggregation.

Port VLAN, Protocol VLAN, Voice VLAN...

Import and export priority setting, Voice priority accessibility

Dynamic/static aggregation Extended transmission bandwidth

Rich ring network networking Improve network stability

VLAN

QoS

LACP

ERPS/RSTP/ STP/MSTP

IPV4/IPV6 dual stack

ONV L2+ Management

Multi-type network convenient link

■ **Security**

◇ 802.1X authentication.

◇ Port isolation,Storm control.

◇ IP-MAC-VLAN-Port binding.

IGMP Snooping   AAA   SSL   ARP Snooping   DHCP Snooping   IP+MAC+ Port+VLAN binding   Port isolation Storm suppression   Secure Management
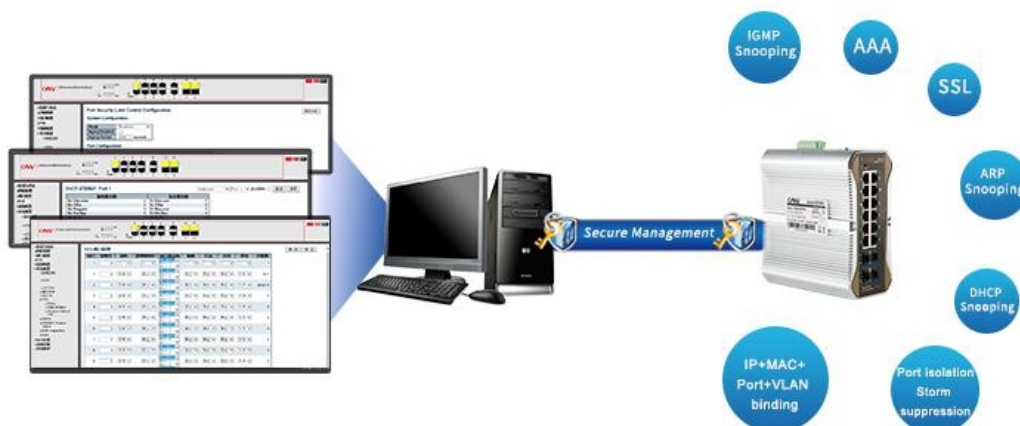
■ **Stable and reliable**

◇ CCC,CE, FCC, RoHS.

◇ Low power consumption, no fan , aluminum casing.

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◇ The user-friendly panel, it can show the device status through the LED indicator of
PWR, Link ,PoE.
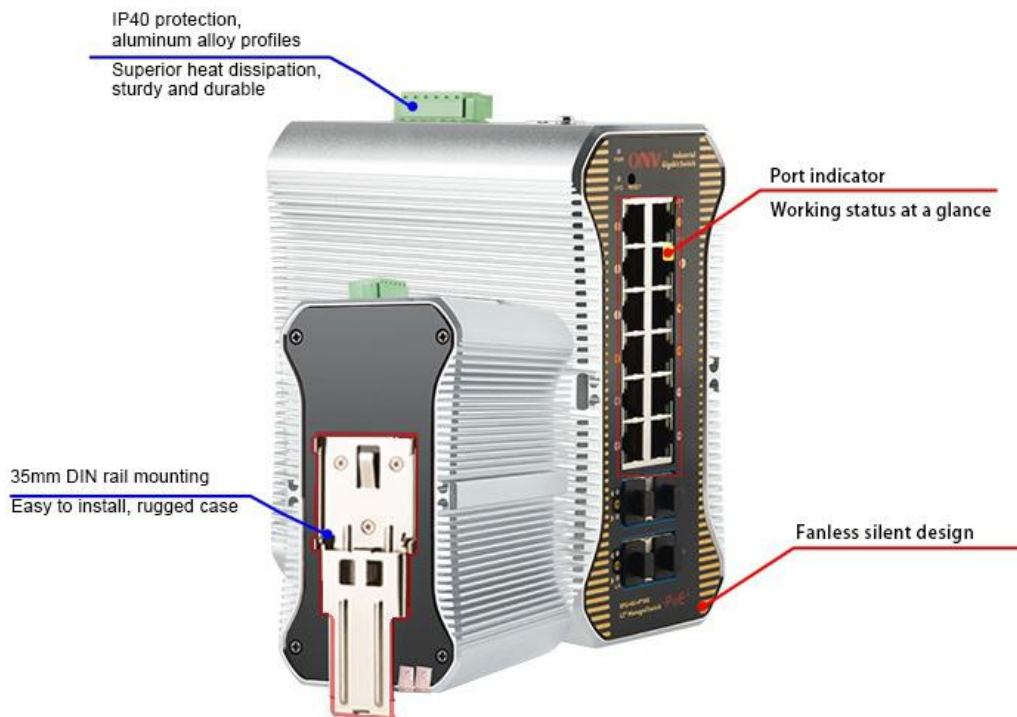
■ **Easy operation and maintenance management**

◇ HTTPS, SSLV3, and SSHV1/V2.

◇ RMON, system log, LLDP, and port traffic statistics.

◇ CPU monitoring, memory monitoring, Ping test, and cable diagnose.

◇ Web management, CLI command line (Console, Telnet), SNMP (V1/V2/V3).

TECHNICAL SPECIFICATION

Model	ONV-IPS36168PFM	ONV-IPS36168PFM-at
Interface Characteristics		
Fixed Port	8*10/100/1000Base-T PoE ports (Data/Power) 4*10/100/1000Base-T uplink RJ45 ports (Data) 4*1/10G uplink SFP+ slot ports (Data) 2 set of V+, V- redundant DC power interface (6 Pin Phoenix terminal) Power off alarm switch (FAULT)	

| Ethernet Port	Port 1-12 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 meter) 100BASE-TX: Cat5 or later UTP(≤100 meter) 1000BASE-T: Cat5e or later UTP(≤100 meter)
Optical Fiber Port	Gigabit SFP /10G SFP+ optical fiber interface, default matching optical modules (optional order single-mode / multi-mode, single fiber / dual fiber optical module. LC)
SFP Port Expansion	Turbo overclocking 2.5G optical module and ring
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	L2+
Network Protocol	IEEE802.3 10BASE-T, IEEE802.3i 10Base-T IEEE802.3u 100Base-TX , IEEE802.3ab 1000Base-T IEEE802.3z 1000Base-X IEEE802.3x
Forwarding Mode	Store and Forward(Full Wire Speed)
Switching Capacity	368Gbps
Forwarding Rate@64byte	77.38Mpps
MAC	24K
Buffer Memory	24M
Jumbo Frame	9.6K
LED Indicator	System : SYS (green), Network: Link (yellow), Fiber Port : L/A (green), PoE: PoE (green)
Reset Switch	Yes, One-button factory reset

PoE & Power	
PoE Port	Port 1 to 8
PoE Management	PoE working status Delay start of power supply PoE output priority configuration Scheduling of PoE operation and time Total power limit of PoE power supply PoE output power allocation, off& af &at
Power Supply Pin	Default: 1/2 (+), 3/6 (-)
Max Power Per Port	30W, IEEE802.3af/at
Total PWR / Input Voltage	120W /48VDC	240W /48VDC
Power Consumption	Standby<15W, Full load<120W	Standby<16W, Full load<240W
Working Voltage	48-57VDC, 6 Pin 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~+80°C;5%~90% RH Non condensing
Storage TEMP / Humidity	-40~+85°C;5%~95% RH Non condensing
Dimension (L*W*H)	166*149*74.5mm
Net /Gross Weight	<1.9kg / <2.4kg
Installation	Desktop, DIN rail
Certification & Warranty	
Lightning protection / protection level	Lightning protection: 6KV 8/20us; Protection level: IP40 IEC61000-4-2(ESD):±8kV contact discharge,±15kV air discharge IEC61000-4-3(RS):10V/m(80~1000MHz)

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|	
	IEC61000-4-4(EFT): power cable:±4kV; data cable:±2kV
	IEC61000-4-5(Surge):power cable:CM±4kV/DM±2kV; data cable:±4kV
	IEC61000-4-6(radio frequency transmission):10V(150kHz~80MHz)
	IEC61000-4-8(power frequency magnetic field):100A/m;1000A/m ,1s to 3s
	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
	IEC61000-4-16(common-mode transmission):30V; 300V,1s
	FCC Part 15/CISPR22(EN55022):Class A
	IEC61000-6-2(Common Industrial Standard)
Mechanical Properties	IEC60068-2-6 (anti vibration)
	IEC60068-2-27 (anti shock)
	IEC60068-2-32 (free fall)
Certification	CCC;CE mark, commercial; CE/LVD EN60950;FCC Part 15 Class B; RoHS
Warranty	5 years, lifelong maintenance.
Network Management Features	
Interface	IEEE802.3X (Full-duplex)
	Port temperature protection setting
	Port green Ethernet Energy-saving setting
	Broadcast storm control based on port speed
	The speed limit of the message flow in the access port.
	The minimum particle size is 64Kbps.
Layer 3 Features	L2+ network management ,IPV4/IPV6 management
	L3 soft routing forwarding,
	Static route, Default route @ 128 pcs, APR @ 1024 pcs
VLAN	4K VLAN based on port, IEEE802.1q
	VLAN based on the protocol

	VLAN based on MAC
	Voice VLAN, QinQ configuration
	Port configuration of Access, Trunk, Hybrid
Port Aggregation	LACP, Static aggregation
	Max 8 aggregation groups and 8 ports per group.
Spanning Tree	STP (IEEE802.1d),RSTP (IEEE802.1w),MSTP (IEEE802.1s)
Industrial Ring Network Protocol	G.8032 (ERPS),Recovery time less than 20ms
	250 Ring at most, Max 250 devices per ring.
Multicast	MLD Snooping v1/v2,Multicast VLAN
	IGMP Snooping v1/v2, Max 1024 multicast groups, Fast log out
Port Mirroring	Bidirectional data mirroring based on port
QoS	Flow-based Rate Limiting
	Flow-based Packet Filtering
	8*Output queues of each port
	802.1p/DSCP priority mapping
	Diff-Serv QoS,Priority Mark/Remark
	Queue Scheduling Algorithm (SP, WRR, SP+WRR)
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	IP-MAC-VLAN-Port binding
	ARP inspection,Anti-DoS attack
	AAA & RADIUS,MAC learning limit
	Mac black holes,IP source protection
	IEEE802.1X & MAC address authentication
	Broadcast storm control,Backup for host datum
	SSH 2.0,SSL,Port isolation,ARP message speed limit
	User hierarchical management and password protection

DHCP	DHCP Client,DHCP Snooping, DHCP Server,DHCP Relay
Management	One-key recovery Cable Diagnose,LLDP Web Management (HTTPS) NTP,System work log,Ping Test CPU instant utilization status view Console/AUX Modem/Telnet/SSH2.0 CLI Download & Management on FTP, TFTP, Xmodem, SFTP,SNMP V1/V2C/V3 ONV NMS - smart network management system platform(LLDP+SNMP)
System	Category 5 Ethernet network cable Web browser: Mozilla Firefox 2.5 or higher, Google browser chrome V42 or higher, Microsoft Internet Explorer10 or later; TCP/IP, network adapter, and network operating system (such as Microsoft Windows, Linux, or Mac OS X) installed on each computer in a network

DIMENSION

APPLICATION

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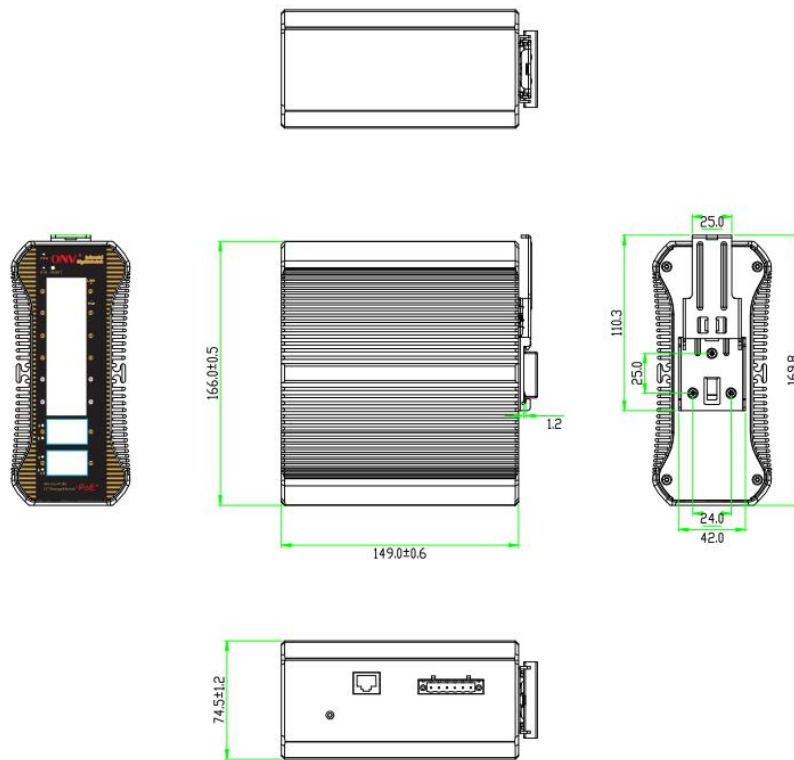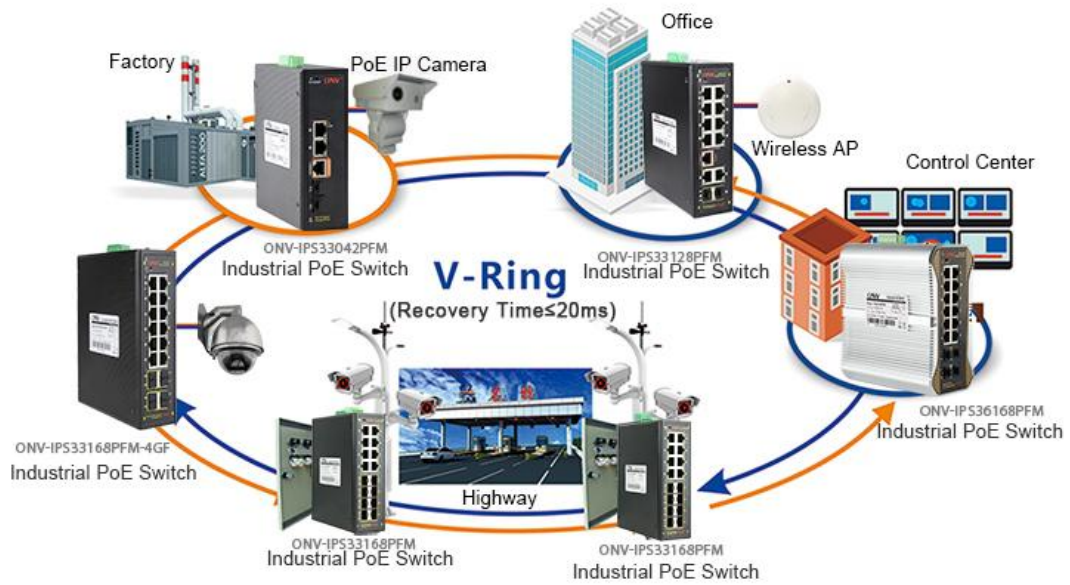
ORDERING INFORMATION

Model	Description	Recommended Power Supply
ONV-IPS36168PFM	L2+ managed industrial PoE fiber switch with 12*10/100/1000M RJ45 ports and 4*1/10G uplink SFP+ slot ports, Port 1-8 can support IEEE802.3af/at PoE. Support dual DC power supply input and DIN rail mounting.	120W
ONV-IPS36168PFM-at		240W
Note: Industrial PoE switch does not match the SFP optical module and power supply.		

PACKING LIST

	CONTENT	QTY	UNIT
PACKING LIST	16-port 10G uplink managed industrial PoE switch	1	SET
	RJ45-DB9 Line	1	PC
	User Guide	1	PC
	Warranty Card	1	PC

OPTICAL MODULE INFORMATION

Product	Model	Description	Unit
1.25G Optical Module	ONV-2630	SFP optical module, 1.25G, multi mode dual fiber 850nm, transmission distance: 550m, LC interface, support DDM function, support hot plug and pull.	PC

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13	ONV-2632	SFP optical module, 1.25G, single-mode dual fiber 1310nm, transmission distance: 20km, LC interface, support DDM function, support hot plug and pull.	PC
	ONV-2612-T	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
	ONV-2613-R	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	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
	ONV-2612-T-SC	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
	ONV-2613-R-SC	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
Power Module	ONV-2633	1.25G SFP optical module transfers to 10/100/1000M RJ45 port.	PC

10G Optical Module	ONV-6630	SFP+ optical module,10G Multi-mode dual fiber 850nm, transmission distance: 300m, LC interface, support DDM function,support hot plug and pull.	PC
	ONV-7832	SFP+ optical module,10G Single-mode dual fiber 1310nm, transmission distance: 20km, LC interface, support DDM function, support hot plug and pull.	PC
	ONV-7832-33	SFP+ optical module,10G Single-mode single fiber TX1330nm/RX1270nm , transmission distance: 20km, LC interface, support DDM function, support hot plug and pull.	PC
	ONV-7832-27	SFP+ optical module,10G Single-mode single fiber TX1270nm/RX13300nm , transmission distance: 20km, LC interface, support DDM function, support hot plug and pull.	PC

POWER SUPPLY SELECTION TABLE

Product	Model	Description	Unit
130W Desktop Power Adaptor	GWS-AP130-52	Desktop tape 130W single set of output power adapter; Input Voltage:AC 100V~240V 50-60Hz,2.3A Output Voltage:DC 52V 2.5A Operation Temperature:-20℃—+65℃	PC

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250W Desktop Power Adaptor	GWS-AP250-52	Desktop tape 250W single set of output power adapter; Input Voltage:AC 100V~240V 50-60Hz,4.1A Output Voltage:DC 52V 4.8A Operation Temperature:-20℃—+65℃	PC
120W DIN Rail Industrial Power Supply	GWS-DP120-48	Din Rail type 120W single set of output power supply; Input Voltage:AC 100V~240V 50-60Hz,1.5A Output Voltage:DC 48V 2.5A Operation Temperature:-40℃—+70℃	PC
240W DIN Rail Industrial Power Supply	GWS-DP240-48	Din Rail type 240W single set of output power supply; Input Voltage:AC 100V~240V 50-60Hz,3A Output Voltage:DC 48V 5A Operation Temperature:-40℃—+70℃	PC
480W DIN Rail Industrial Power Supply	GWS-DP480-48	Din Rail type 480W single set of output power supply; Input Voltage:AC 100V~240V 50-60Hz,5A Output Voltage:DC 48V 10A Operation Temperature:-40℃—+70℃	PC

RELATED PRODUCT

Model	Description
ONV-IPS33168PFM-4GF	L2+ managed industrial PoE fiber switch with 12*10/100/1000M RJ45 ports and 4*100/1000M SFP slot ports. Port 1-8 can support IEEE802.3af/at PoE. Support dual DC power supply input and DIN rail mounting.
ONV-IPS33248PFM	L2+ managed industrial PoE fiber switch with 12*10/100/1000M RJ45 ports and 12*100/1000M SFP slot ports, Port 1-8 can support IEEE802.3af/at PoE. Support dual DC power supply input and DIN rail mounting.
ONV-IPS33248PFM-4GF	L2+ managed industrial PoE fiber switch with 20*10/100/1000M RJ45 ports and 4*100/1000M SFP slot ports, Port 1-8 can support IEEE802.3af/at PoE. Support dual DC power supply input and DIN rail mounting.
ONV-IPS36168PFM	L2+ managed industrial PoE fiber switch with 12*10/100/1000M RJ45 ports and 4*1/10G uplink SFP+ slot ports, Port 1-8 can support IEEE802.3af/at PoE. Support dual DC power supply input and DIN rail mounting.
ONV-IPS36248PFM-8G	L2+ managed industrial PoE fiber switch with 20*10/100/1000M RJ45 ports and 4*1/10G uplink SFP+ slot ports, Port 1-8 can support IEEE802.3af/at PoE. Support dual DC power supply input and DIN rail mounting.

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