Product Datasheet

12-Port Full Gigabit Managed Industrial Ethernet Switch
ONV-IPS33128FM

- 10*10/100/1000M RJ45 ports and 2*100/1000M SFP uplink SFP slot ports.

- Support G.8032 ERPS ring network protocol (self-healing time <20ms), RSTP, STP and MSTP are used for Ethernet ring network redundancy.

- Support IPV4/IPV6 dual stack protocol, TACACS+, ACL, IEEE 802.1X, HTTPS and SSH to enhance network security.

- Support various management and maintenance of Web network management, Console, SNMP (V1/V2/V3), and Telnet.

- Support dual power supply redundancy access, support anti-reverse protection, DC48-57V input, 6KV port lightning protection, IP40 protection level.

- -40°C-+80°C working temperature, no fear of harsh environment.

OVERVIEW

The ONV-IPS33128FM series is a full gigabit managed industrial Ethernet fiber switch independently developed by ONV. It has 10*10/100/1000Base-T RJ45 ports and 2*100/1000Base-X SFP fiber ports. Each port can support wire-speed forwarding.

The ONV-IPS33128FM has L2+ network management function, supports IPV4/IPV6 management, supports static route forwarding, complete security protection mechanism, ACL/QoS policy, and

VLAN function, 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, it can be quickly Resume communication and ensure uninterrupted communication. Configure the port management, routing address management, port traffic control, VLAN division, IGMP, and security policy based on the network management methods such as Web, CLI, SNMP, and Telnet. The ONV-IPS33148FM industrial Ethernet switch follows the industrial product design and materials. The outer casing is made of aluminum alloy to enhance the heat dissipation performance. It has excellent industrial field environment adaptability (mechanical stability, climatic environment adaptability, electromagnetic environment adaptability, etc.) and protection. grade IP40, support dual redundant power supply, low power fanless cooling technology, MTBF mean time between failures up to 35 years, 5 years warranty. It is suitable for industrial channels such as intelligent transportation, rail transit, power industry, mining, petroleum, shipping, metallurgy and green energy construction to form a cost-effective, stable and reliable communication network.

FEATURE

■ **Full gigabit port access**

◇ All series supports gigabit Ethernet port and gigabit 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.

■ **Port lightning protection, ultra-wide voltage input**

◇ Contact discharge 8KV, air discharge 15KV; port lightning protection common-mode 4KV, differential mode 2KV;

◇ Industrial dual power input

◇ Non-PoE DC INPUT: 12-48V.

■ **Network management and fast Ring function**

◇ IGMP V1/V2 and IGMP Snooping.

◇ ERPS/STP/RSTP/MSTP.

◇ Static and dynamic aggregation.

◇ IEEE802.1Q VLAN, flexible VLAN division 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.

■ **Security**

◇ 802.1X authentication.

◇ Port isolation,Storm control.

◇ IP-MAC-VLAN-Port binding.

■ **Stable and reliable**

◇ CE, FCC, RoHS.

◇ Low power consumption, fan-less design, aluminum shell.

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

■ **One-stop remote control and 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

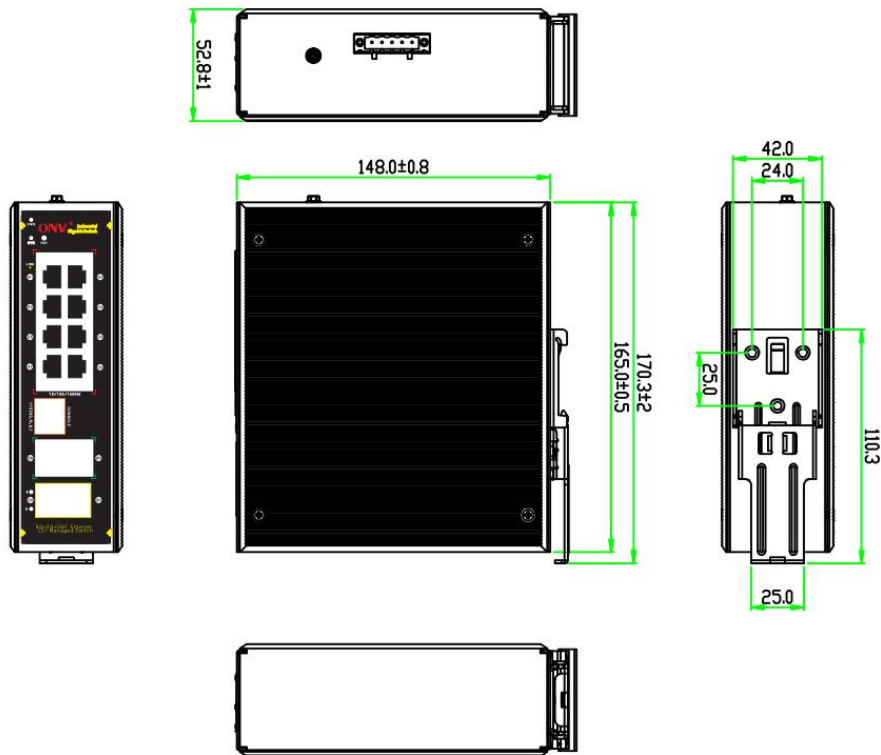| Model	ONV-IPS33128FM	ONV-IPS33148FM
Interface Characteristics		
Fixed Port	10*10/100/1000Base-T RJ45 ports (Data) 2*100/1000Base-X uplink SFP fiber slot ports (Data) 1 * RS232 console port(115200,N,8,1) 2 set of V+, V- redundant DC power interface (5 Pin Phoenix terminal)	10*10/100/1000Base-T RJ45 ports (Data) 4*100/1000Base-X uplink SFP fiber slot ports (Data) 1 * RS232 console port(115200,N,8,1) 2 set of V+, V- redundant DC power interface (6 Pin Phoenix terminal) Power-off alarm switch (FAULT)
Ethernet Port	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)	
SFP Slot Port	Gigabit SFP optical fiber interface, default not matching optical modules (optional order single-mode / multi-mode, single fiber / dual fiber optical module. LC)	
SFP Port Expansion	No	Turbo overclocking 2.5G optical module and ring
Optical Fiber / Distance	Multi mode: 850nm / 0 ~500m, 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/FX; IEEE802.3ab 1000Base-TX IEEE802.3z 1000Base-X IEEE802.3x	
Forwarding Mode	Store and Forward(Full Wire Speed)	
Switching Capacity	192Gbps	256Gbps
Forwarding Rate@64byte	17.86Mpps	20.83Mpps
MAC	8K	
Buffer Memory	6M	
Jumbo Frame	9.6K	
LED Indicator	Power: PWR (green), System : SYS (green), Network: Link (yellow), SFP: L/F (green)	
Reset Switch	Yes, Press and hold the reset switch for 10s and release it to restore the factory settings	
Power		
Working Voltage	12-48VDC, 5 Pin industrial Phoenix terminal, support anti-reverse protection.	12-48VDC, 6 Pin industrial Phoenix terminal, support anti-reverse protection.
Power Consumption	Standby<8W;Full load<13W	Standby<10W;Full load<15W
Power Supply	No, optional 24V/24W 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)	165*148*54mm	

Net /Gross Weight	<0.8kg / <1.3kg	<1.1kg / <1.4kg
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) 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 6 aggregation groups and 8 ports per group.	LACP, Static aggregation Max 7 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 1024 devices per ring.	
Multicast	MLD Snooping v1/v2,Multicast VLAN IGMP Snooping v1/v2, Max 250 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
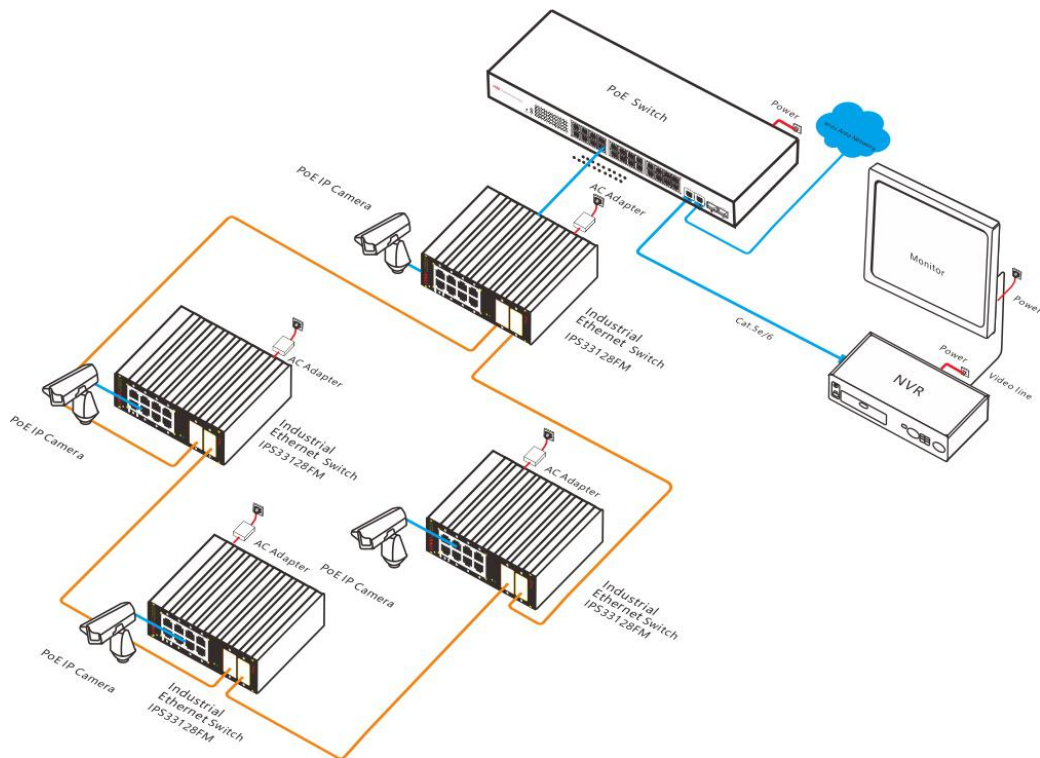
ORDERING INFORMATION

Model	Description	Recommended Power Supply
ONV-IPS33148FM	L2+ managed industrial Ethernet fiber switch with 10*10/100/1000M RJ45 ports and 4*100/1000M SFP fiber ports. It can support DC dual power supply and DIN rail mounting.1 way alarm switch output.	24W
ONV-IPS33128FM	L2+ managed industrial Ethernet fiber switch with 10*10/100/1000M RJ45 ports and 2*100/1000M SFP fiber ports. It can support DC dual power supply and DIN rail mounting.	24W

Note: Industrial Ethernet switch does not match the SFP optical module and power supply.

PACKING LIST

	CONTENT	QTY	UNIT
PACKING LIST	12-port full gigabit managed industrial Ethernet 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
	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	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

POWER SUPPLY SELECTION TABLE

Product	Model	Description	Unit
24W DIN Rail Industrial Power Supply	GWS-DP24-24	Din Rail type 24W single set of output power supply; Input Voltage:AC 100V~240V 50-60Hz,0.35A Output Voltage:DC 24V 1A Operation Temperature:-40℃—+70℃	PC

RELATED PRODUCT

Model	Description
ONV-IPS33064FM	L2+ managed industrial Ethernet fiber switch with 4*10/100/1000M RJ45 ports and 2*100/1000M SFP fiber ports. It can support DC dual power supply and DIN rail mounting.
ONV-IPS33084FM	L2+ managed industrial Ethernet fiber switch with 4*10/100/1000M RJ45 ports and 4*100/1000M SFP fiber ports. It can support DC dual

	power supply and DIN rail mounting.
ONV-IPS33108FM	L2+ managed industrial Ethernet fiber switch with 8*10/100/1000M RJ45 ports and 2*100/1000M SFP fiber ports. It can support DC dual power supply and DIN rail mounting.
ONV-IPS33168FM	L2+ managed industrial Ethernet fiber switch with 8*10/100/1000M RJ45 ports and 8*100/1000M SFP fiber ports. It can support DC dual power supply and DIN rail mounting.
ONV-IPS33168FM-4 GF	L2+ managed industrial Ethernet fiber switch with 12*10/100/1000M RJ45 ports and 4*100/1000M SFP fiber ports. It can support DC dual power supply and DIN rail mounting.
ONV-IPS38168FM	L3 managed industrial Ethernet core fiber switch with 12*10/100/1000M RJ45 ports and 4*1/10G SFP+ fiber ports. It can support DC dual power supply and DIN rail mounting.

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