Product Datasheet

6-port Full Gigabit Bypass Managed Industrial Ethernet Switch (ONV-IPS33006FM-BY)

OVERVIEW

The ONV-IPS33006FM-BY is a full Gigabit L2+ managed bypass industrial Ethernet fiber switch independently developed by ONV. It has 4*10/100/1000Base-T adaptive RJ45 ports and 2*100/1000Base-X uplink SFP fiber ports. Each port can support wire-speed forwarding. The switch integrates the bypass optical switching module. When the power supply of the switch is interrupted, the optical fiber is automatically switched to the bypass-through state to avoid communication interruption due to switch failure and ensure the reliability of network transmission.

The ONV-IPS33006FM-BY has L2+ network management function, supports IPV4 static route forwarding, complete security protection mechanism, ACL/QoS policy, and rich VLAN functions, easy to manage and maintain. Support multiple network redundancy protocols STP/RSTP/MSTP(<50ms) to improve link backup and network reliability to ensure uninterrupted communication of important applications. According to actual application needs, port management, routing address management, port flow control, VLAN division, IGMP, security policy, and other application service configurations are

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performed through Web, CLI, SNMP, Telnet, and other network management methods. The shell is made of aluminum alloy, which has excellent industrial field environmental adaptability (including mechanical stability, climate environment adaptability, electromagnetic environment adaptability, etc.). the protection level is IP40, supports dual redundant power supply, low power consumption, and no fan, and 5-year warranty. It is suitable for industrial scenarios such as intelligent transportation, rail transit, the electric power industry, mining, petroleum, shipping, metallurgy, and green energy construction to establish a cost-effective, stable, and reliable communication network.

FEATURE

■ **Gigabit access, SFP fiber port uplink, Integrated Bypass function**

◇ Support non-blocking wire-speed forwarding.

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

◇ Support Gigabit Ethernet port and Gigabit SFP port combination, which enables users to flexibly build networking to meet the needs of various scenarios.

◇ Support physical single-mode single fiber optical path (Bypass) function, pure hardware switching, short switching time, does not affect the data transmission rate and improves the stability of the network system.

■ **Strong business processing ability**

◇ Support STP/RSTP/MSTP production tree protocol, eliminate layer 2 loops and realize link backup.

◇ Support static and dynamic aggregation to effectively increase link bandwidth, realize load balancing, link backup, and improve link reliability.

◇ Support IGMP Snooping V1/V2/V3 to meet the multi-terminal high-definition video surveillance and video conference access requirements.

◇ 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 IEEE 802.1Q VLAN, users can flexibly divide VLAN according to needs, and support three types of port configurations: Access, Trunk, and Hybrid.

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◇ Support ACL to filter data packets by configuring matching rule processing operations and time permissions, and provide flexible security access control policies.

■ **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.

■ **Stable and reliable**

◇ CCC, CE, FCC, RoHS.

◇ The user-friendly pane can show the device status through the LED indicator of PWR, SYS, Link, and L/A.

◇ Low power consumption, no fan, aluminum shell, and excellent heat dissipation ensure the stable operation of the switch.

■ **Easy O&M management**

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

◇ Support HTTPS, 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 (Console, Telnet), SNMP (V1/V2/V3), Telnet, and other diversified management and maintenance methods.

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TECHNICAL SPECIFICATION

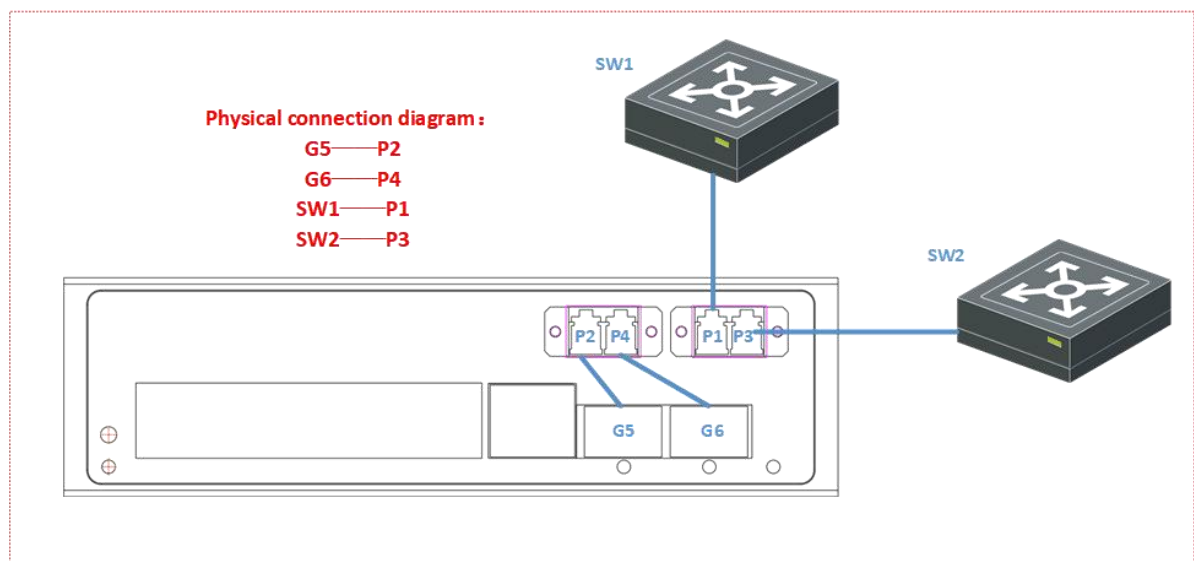| Model	ONV-IPS33006FM-BY
Interface Characteristics	
Fixed Port	1*RS232 console port (115200,N,8,1) 4*10/100/1000Base-T RJ45 ports (Data) 2*100/1000Base-X uplink SFP slot ports (Data) 2 set of V+, V- redundant DC power interface (5 Pin Phoenix terminal)
Bypass Optical Port	Power ON: P1— P4 intercommunication, P2—P3 intercommunication Power OFF: P1— P3 Pass-through
Ethernet Port	Port 1-4 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)
SFP Slot Port	Gigabit optical fiber port, default no include optical module (optional single-mode/ multi-mode, single fiber/ dual fiber optical module. LC)
Optical Cable/ 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 IEEE802.3ab 1000Base-X, IEEE802.3z 1000Base-X, IEEE802.3x
Forwarding Mode	Store and Forward(Full Wire Speed)
Switching Capacity	12Gbps
Forwarding Rate@64byte	8.93Mpps
CPU(Hz)	500M

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DRAM	1G
Flash	128M
MAC	8K
Buffer Memory	4M
Jumbo Frame	10K
LED Indicator	Power/ System: SYS (Green), Network: Link (Yellow), Fiber port: L/A (Green)
Reset Switch	Yes, Press and hold the reset switch for 10s and release it to restore the factory settings

Power Supply

Working Voltage	DC12-48V, 5 Pin industrial Phoenix terminal, support anti-reverse protection.
Power Consumption	Standby<8W, Full load<12W
Power Supply	No, optional 24V/24W industrial power supply

Physical Parameter

Operation TEMP / Humidity	-40~+75°C, 5%~90% RH Non condensing
Storage TEMP / Humidity	-40~+85°C, 5%~95% RH Non condensing
Dimension	145*134.5*47mm
Net /Gross Weight	0.6kg / 0.9kg
Installation	Desktop, 35mm DIN Rail

Certification & Warranty

Lightning Protection	Protection level: IP40 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

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6	IEC61000-4-10 (Damped oscillation): 30A/m 1MHz
	IEC61000-4-12/18 (Shockwave): CM 2.5kV, DM 1kV
	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	CCC, CE mark, commercial, CE/LVD EN62368-1, FCC Part 15 Class B, RoHS
Warranty	5 years, lifelong maintenance.
Network Management Feature	
Interface	IEEE802.3x flow control (Full duplex) Port real-time traffic management (Flow Interval) Broadcast storm suppression based on port rate Limit the rate of packet traffic on the ingress and egress ports. The mini granularity is 16Kbps and the max is 1Gbps
Layer 3 Features	Static routing/ default routing with max 128 entries L2+ network management, ARP protocol max entries 1024
VLAN	Port configuration of Access, Trunk, Hybrid 4K VLAN based on port, IEEE802.1q, VLAN based on the protocol
Port Aggregation	LACP dynamic aggregation, Static aggregation Max 3 aggregation groups and 8 ports per group.
Spanning Tree	STP (IEEE802.1d), RSTP (IEEE802.1w), MSTP (IEEE802.1s)
Multicast	Multicast VLAN, Fast log out IGMP Snooping v1/v2/V3, Max 1024 multicast groups
Port Mirroring	Bidirectional data mirroring based on port

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QoS	Diff-Serv QoS, Priority Mark/ Remark
	Queue Scheduling Algorithm (SP, WRR, SP+WRR)
	Flow-based rate limiting, Flow-based packet filtering
	8*output queues of each port, 802.1p/DSCP priority mapping
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
Management	FTP, TFTP file upload and download management
	ONV NMS platform cluster management (LLDP+SNMP)
	NTP, System work log, Ping Test, SNMP V1/V2/V3, LLDP
	CPU instant utilization status view, Console/ Telnet/ SSH2.0 CLI
	Web Management (HTTPS), Cable Diagnose, One-key recovery
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

DIMENSION

APPLICATION

Physical connection diagram：

G5———P2
G6———P4
SW1———P1
SW2———P3

ORDERING INFORMATION

Model	Description	Recommended Power Supply
ONV-IPS33006FM-BY	L2+ managed bypass industrial Ethernet fiber switch with 4*10/100/1000M RJ45 ports and 2*100/1000M uplink SFP fiber ports. It can support dual DC power supply input and DIN rail mounting.	24V/24W

Note: The optical module and power supply are not included. need to be purchased separately.

PACKING LIST

	Content	Qty	Unit
Packing List	6-port full gigabit managed bypass industrial Ethernet switch	1	SET
	RJ45-DB9 Line	1	PC
	User Guide	1	PC
	Warranty Card	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, support DDM function, support hot plug and pull.	PC
	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

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10	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-SC-G	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-SC-G	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

POWER SUPPLY

Product	Model	Description	Unit
24W DIN Rail Industrial Power Supply	GWS-DP24-24	DIN Rail 24W single set of output power supply Input Voltage: AC100V~240V 50-60Hz, 0.35A Output Voltage: DC24V, 1.0A Operation Temperature: -40℃ to 70℃	PC

RELATED PRODUCT

Model	Description
ONV-IPS33010FM-BY	L2+ managed bypass industrial Ethernet fiber switch with 8*10/100/1000M RJ45 ports and 2*100/1000M uplink SFP fiber ports. It can support dual DC power supply input and DIN rail mounting.

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