

Product Datasheet

10-port Gigabit Bypass Managed Industrial Ethernet Switch (ONV-IPS33010FM-BY)



OVERVIEW

The ONV-IPS33010FM-BY is a Gigabit L2+ managed bypass industrial Ethernet fiber switch independently developed by ONV. It has 8*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-IPS33010FM-BY has L2+ network management functions, supports IPV4 management, static routing forwarding, complete security protection mechanism, perfect ACL/QoS strategy, and rich VLAN functions for easy management and maintenance.

Supports multiple network redundancy protocols STP/RSTP/MSTP (<50ms) to improve link backup and network reliability to ensure uninterrupted communication of important applications. According to application needs, port management, routing address management, port flow control, VLAN division, IGMP, security strategy, and other application business configurations can be performed through network management methods such as Web, CLI, SNMP, and Telnet. It is suitable for industrial scenarios such as intelligent transportation, rail transportation, power industry, mining, petroleum, shipping, metallurgy, and green energy construction to form economical, efficient, stable, and reliable communication networks.

FEATURE

■ Gigabit access, uplink SFP fiber port

- ◇ Support non-blocking wire-speed forwarding.
- ◇ Support full-duplex based on IEEE 802.3x and half-duplex based on Backpressure.
- ◇ Support Gigabit RJ45 port and 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 Access, Trunk, and Hybrid port configuration.
- ◇ Support IEEE 802.1Q VLAN. Users can divide VLAN according to their needs.
- ◇ 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 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 and 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, and Link.
- ◇ 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.

TECHNICAL SPECIFICATION

Model	ONV-IPS33010FM-BY
Interface Characteristics	
Fixed Port	1*Console port (115200,N,8,1) 8*10/100/1000Base-T RJ45 ports (Data) 2*100/1000Base-X uplink SFP fiber ports (Data) 2 sets V+, V- redundant DC power port (5P Phoenix terminal)
Bypass Optical Port	Power ON: P1-P4 intercommunication, P2-P3 intercommunication Power OFF: P1-P3 Pass-through
Ethernet Port	Port 1-8 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	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	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 802.3x
Forwarding Mode	Store and Forward (Full Wire Speed)
Switching Capacity	20Gbps (non-blocking)
Forwarding Rate @64byte	14.88Mpps
CPU(Hz)	500M

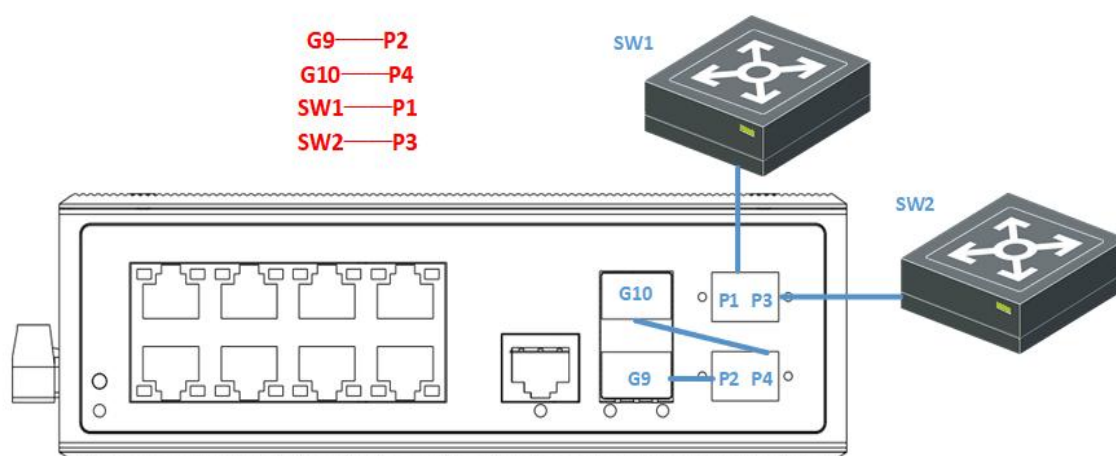
DRAM	1G
Flash	128M
MAC	8K
Buffer Memory	4.1M
Jumbo Frame	10K
LED Indicator	Power: PWR (Green), System: SYS (Green), Network: Link (Yellow), Fiber port: L/A (Green)
Reset Switch	Yes, Press and hold the reset switch for 10s and release it to restore the factory settings
Power Supply	
Working Voltage	DC12-48V, 5P 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	165*148*54mm
Net /Gross Weight	0.9kg / 1.1kg
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
	IEC61000-4-10 (Damped oscillation): 30A/m 1MHz

	<p>IEC61000-4-12/18 (Shockwave): CM 2.5kV, DM 1kV</p> <p>IEC61000-4-4 (EFT): Power cable:±4kV, data cable: ±2kV</p> <p>IEC61000-4-16 (Common-mode transmission): 30V, 300V, 1s</p> <p>IEC61000-4-2 (ESD): ±8kV contact discharge, ±15kV air discharge</p> <p>IEC61000-4-6 (Radio frequency transmission):10V (150kHz~80MHz)</p> <p>IEC61000-4-8 (Power frequency magnetic field):100A/m, 1000A/m,1s-3s</p> <p>IEC61000-4-5 (Surge): Power cable: CM±4kV/DM±2kV, data cable: ±4kV</p>
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	<p>IEEE 802.3x flow control (Full duplex)</p> <p>Port real-time traffic management (Flow Interval)</p> <p>Broadcast storm suppression based on port rate</p> <p>Limit the speed of the message traffic at the inbound and outbound ports, mini granularity is 16Kbps and max 1Gbps</p>
L3 Feature	<p>IPV4 static routing/ default routing, max 128 entries</p> <p>L2+ network management, ARP protocol, max 1024 entries</p>
VLAN	<p>Port configuration of Access, Trunk, Hybrid</p> <p>4K VLAN based on port, IEEE802.1q, VLAN based on the protocol</p>
Port Aggregation	<p>LACP dynamic aggregation, Static aggregation</p> <p>Max 5 aggregation groups and 8 ports per group.</p>
Spanning Tree	STP (IEEE802.1d), RSTP (IEEE802.1w), MSTP (IEEE802.1s)
Multicast	<p>Multicast VLAN, Fast log out</p> <p>IGMP Snooping v1/v2/V3, Max 1024 multicast groups</p>
Port Mirroring	Bidirectional data mirroring based on port
QoS	Diff-Serv QoS, Priority Mark/ Remark

	<p>Queue scheduling mechanism (SP, WRR, SP+WRR)</p> <p>8*output queues of each port, 802.1p/DSCP priority mapping</p> <p>Flow-based packet filtering, Flow-based redirection, Flow-based rate limiting</p>
ACL	<p>Port-based Issuing ACL, ACL based on port and VLAN</p> <p>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.</p>
Security	<p>IP-MAC-VLAN-Port binding</p> <p>ARP inspection, Anti-DoS attack</p> <p>AAA & RADIUS, MAC learning limit</p> <p>Mac black holes, IP source protection</p> <p>IEEE802.1X & MAC address authentication</p> <p>Broadcast storm control, Backup for host datum</p> <p>SSH 2.0, SSL, Port isolation, ARP message speed limit</p> <p>User hierarchical management and password protection</p>
DHCP	DHCP Client, DHCP Snooping, DHCP Server
Management	<p>Web network management</p> <p>CPU real-time utilization status check</p> <p>Link Layer Discovery Protocol (LLDP)</p> <p>NTP clock, SNMP V1/V2/V3, One-click restore</p> <p>FTP, TFTP file upload and download management</p> <p>System work log, Cable status check, Ping detection</p> <p>ONV-NMS platform cluster management (LLDP+SNMP)</p> <p>Console/ Telnet/ SSH2.0, CLI command line configuration</p>
System	<p>Web browser: Mozilla Firefox 2.5 or higher, Google Chrome V42 or higher, Cat5 and above Ethernet cable</p> <p>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</p>

DIMENSION

PHYSICAL CONNECTION



APPLICATION

ORDERING INFORMATION

Model	Description	Recommended Power Supply
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.	24V/24W
Note: The optical module and power supply are not included and need to be purchased.		

PACKING LIST

	Content	Qty	Unit
Packing List	10-port gigabit managed bypass industrial Ethernet switch	1	SET
	RJ45-DB9 Adapter Cable	1	PC
	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
	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

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-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.

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