Product Datasheet

16-port Full Gigabit L2+ Managed Industrial Ethernet Switch
(ONV-IPS33016M)

OVERVIEW

The ONV-IPS33016M is a full gigabit L2+ managed industrial Ethernet switch independently developed by ONV. It has 16*10/100/1000Base-T adaptive RJ45 ports. Each port can support wire-speed forwarding.

The ONV-IPS33016M has L2+ network management function, supports IPV4/IPV6 management, static route forwarding, complete security protection mechanism, complete ACL/QoS policy, and rich VLAN functions for easy management and maintenance. Supports multiple network redundancy protocols STP/RSTP/MSTP (<50ms) and (ITU-T G.8032) ERPS (<20ms) to improve link backup and network reliability, and can quickly restore communications when a one-way network fails. Ensure uninterrupted communication for important applications. According to the application needs, various application services configurations such as port management, routing address management, port flow control, VLAN division, IGMP, security policy, and other network management methods are carried out through Web, CLI, SNMP, Telnet, and other network management methods. It meets the needs of various industrial Ethernet application environments and is suitable for establishing economical, efficient, stable, and reliable communication networks in industrial scenarios such as intelligent transportation, rail transportation, power industry, mining, petroleum, shipping, metallurgy, and green energy construction.

FEATURE

■   **Gigabit access, wire-speed transmission**

◇   Support non-blocking wire-speed forwarding.

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

◇   Support line-speed Gigabit adaptive RJ45 port to facilitate users to flexibly network and meet the networking needs of various 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 ERPS ring network and STP/RSTP/MSTP to eliminate layer 2 loops and realize link backup.

◇   Support IEEE 802.1Q VLAN, users can flexibly divide VLANs according to needs and support Voice VLAN and QinQ configuration.

◇   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.

◇   The user-friendly panel 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 to ensure the stable operation of the switch.

■ **Easy O&M management**

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

◇ Support RMON, system log, and port traffic statistics to facilitate network optimization and transformation.

◇ Support HTTPS, SSLV3, SSHV1/V2, and other encryption methods, making management more secure.

◇ Support LLDP to facilitate the network management system to query and judge the communication status of the link.

◇ Support Web network management, CLI command line (Console, Telnet), SNMP (V1/V2/V3), and other diversified management and maintenance.

TECHNICAL SPECIFICATION

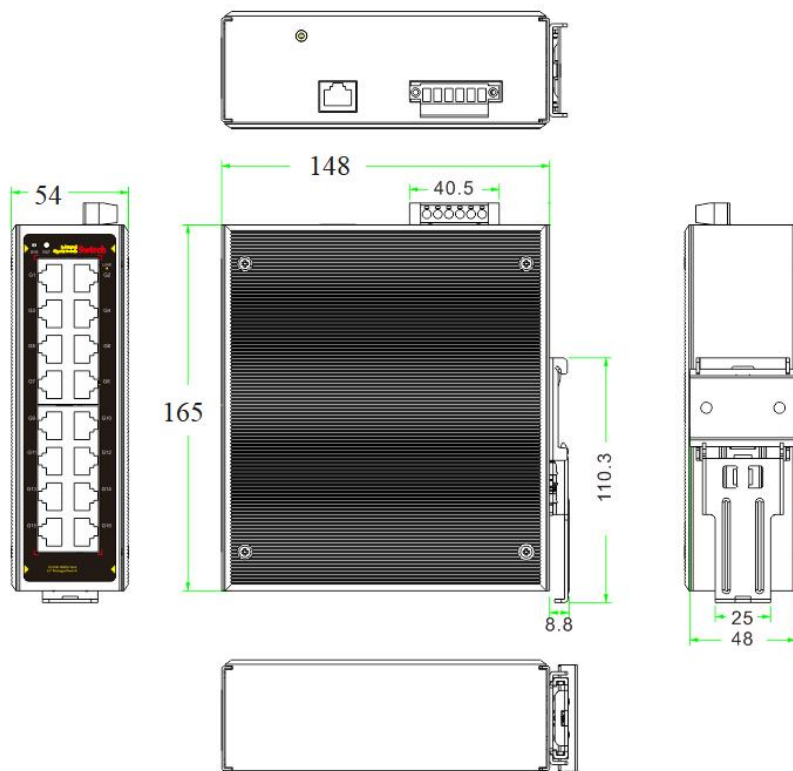| Model	ONV-IPS33016M
Interface Characteristics	
Fixed Port	1*Console port (115200,N,8,1) Power off alarm switch port (FAULT) 16*10/100/1000Base-T RJ45 ports (Data) 2 set of V+, V- redundant DC power ports (6 Pin Phoenix terminal)
Ethernet Port	Port 1-16 support 10/100/1000Base-T auto-sensing, full/ 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)
Chip Parameter	
Network Management	L2+

Type	
Network Protocol	IEEE 802.3 10BASE-T, IEEE 802.3i 10Base-T, IEEE 802.3u 100Base-TX , IEEE 802.3ab 1000Base-T, IEEE 802.3x
Forwarding Mode	Store and Forward (Full Wire Speed)
Switching Capacity	52Gbps (non-blocking)
Forwarding Rate@64byte	23.81Mpps
MAC	8K
Buffer Memory	6M
Jumbo Frame	9.6K
LED Indicator	Power: PWR(Green), System: SYS(Green), Network: Link (Yellow)
Reset Switch	Yes. press and hold for 10 seconds and then release to restore factory settings
Power Supply	
Total PWR / Input Voltage	24W/(DC12-48V)
Power Consumption	Standby<10W, Full Load<20W
Power Input Port	DC12-48V, 6 Pin industrial Phoenix terminal, support anti-reverse protection.
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	1.1kg / 1.3kg
Installation	Desktop, 35mm DIN Rail
Certification & Warranty	
Lightning Protection	Protection level: IP40 Lightning protection: 6KV 8/20us

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	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
	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), IEC60068-2-32 (Free Fall), IEC60068-2-27 (Anti Shock)
Certification	CCC, CE mark, commercial, CE/LVD EN62368-1, FCC Part 15 Class B, RoHS
Warranty	5 years, lifelong maintenance.

Network Management Feature

|	
Interface	Port temperature protection settings
	IEEE 802.3x flow control (Full duplex)
	Broadcast storm control based on port speed
	Port EEE Green Ethernet energy-saving configuration
	Limit the speed of the message traffic at the inbound and outbound ports, with mini granularity of 64Kbps
L3 Feature	ARP protocol, max 1024 entries
	Static route/ default route, max 128 entries
	L2+ network management function, IPV4/IPV6 dual-stack management
	L3 routing and forwarding, support communication between different network segments and different VLAN
VLAN	Port configuration of Access, Trunk, Hybrid

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	VLAN based on MAC, VLAN based on the protocol (4K) VLAN based on port, IEEE802.1q, Voice VLAN, QinQ configuration
Port Aggregation	Static aggregation, LACP Max 8 aggregation groups, per group support up to 8 ports
Spanning Tree	STP (IEEE802.1d), RSTP (IEEE802.1w), MSTP (IEEE802.1s)
Industrial Ring Network Protocol	Support ERPS ring network, recovery time less than 20ms, 250 Ring at most, max 250 devices per ring.
Multicast	IGMP Snooping v1/v2/v3, Max 1024 multicast groups MLD Snooping, Multicast VLAN, User quick exit mechanism
Port Mirroring	Bidirectional data mirroring based on port
QoS	Queue Scheduling Algorithm (SP, WRR, SP+WRR) Flow-based rate limiting, Flow-based packet filtering Flow-based redirection, Diff-Serv QoS, Priority Mark/ Remark 8*Output queues of each port, 802.1p/DSCP priority mapping
ACL	ACL issued based on port and VLAN L2-L4 packet filtering function can match the first 80 bytes of the message and provide ACL definition based on source MAC address, destination MAC address, source IP address, destination IP address, IP protocol type, TCP/UDP port, TCP/UDP port range, VLAN, etc.
Security	Port-based IEEE802.1X authentication MAC address the learning number limit SSL ensures data transmission security Port isolation, MAC address the black hole IP+MAC+VLAN+port four-way binding function User hierarchical management and password protection AAA & RADIUS & TACACS+ certification, ARP inspection IP source address protection, Host data backup mechanism SSH 2.0 provides a secure encrypted channel for user login DoS attack prevention, Port broadcast message suppression

	ARP message rate limit function, ARP intrusion detection function
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 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
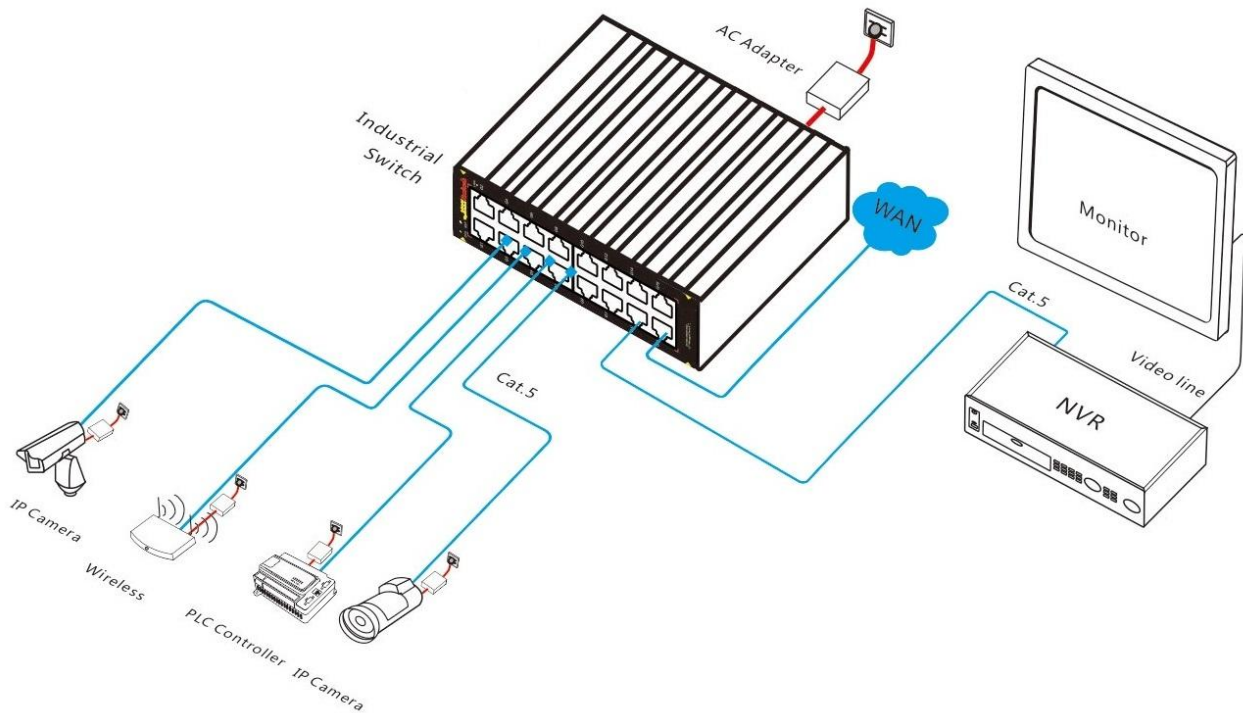
ORDERING INFORMATION

Model	Description	Recommended Power Supply
ONV-IPS33016M	L2+ managed industrial Ethernet switch with 16*10/100/1000M RJ45 ports. It can support dual DC power supply input and DIN rail mounting.	24V/24W

Note: The power supply is not included and needs to be purchased.

PACKING LIST

	Content	Qty	Unit
Packing List	16-port full gigabit managed industrial Ethernet switch	1	SET
	RJ45-DB9 Line	1	PC
	User Guide	1	PC
	Warranty Card	1	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-IPS33064FM	L2+ managed 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.
ONV-IPS33084FM	L2+ managed industrial Ethernet fiber switch with 4*10/100/1000M RJ45 ports and 4*100/1000M uplink SFP fiber ports. It can support dual DC power supply input and DIN rail mounting.
ONV-IPS33108FM	L2+ managed 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.
ONV-IPS33148FM	L2+ managed industrial Ethernet fiber switch with 10*10/100/1000M RJ45 ports and 4*100/1000M uplink SFP fiber ports. It can support dual DC power supply input and DIN rail mounting.
ONV-IPS33168FM	L2+ managed industrial Ethernet fiber switch with 8*10/100/1000M RJ45 ports and 8*100/1000M uplink SFP fiber ports. It can support dual DC power supply input and DIN rail mounting.
ONV-IPS33168FM-4GF	L2+ managed industrial Ethernet fiber switch with 12*10/100/1000M RJ45 ports and 4*100/1000M uplink SFP fiber ports. It can support dual DC power supply input and DIN rail mounting.

CONTACT US

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