Product Datasheet

52-port 10G Uplink L2+ Managed Industrial Ethernet Switch
(ONV-IPS36048FM)

OVERVIEW

The ONV-IPS36048FM is a 10G uplink L2+ managed industrial Ethernet fiber switch independently developed by ONV. It has 48*10/100/1000Base-T adaptive RJ45 ports and 4*1/10G uplink SFP+ fiber ports. Each port can support wire-speed forwarding.

The ONV-IPS36048FM 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.

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FEATURE

■ **Gigabit access, uplink 1/10G SFP+ fiber port**

◇ Support non-blocking wire-speed forwarding.

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

◇ Support Gigabit RJ45 port and 1/10G uplink SFP+ fiber port to meet the networking requirements of various scenarios.

■ **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.

■ **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.

■ **Stable and reliable**

◇ CCC, CE, FCC, RoHS.

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◇ Adopt self-developed power supply and redundant to provide long-term stable power output.

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

◇ Low power consumption, no fan, galvanized steel metal 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-IPS36048FM
Interface Characteristics	
Fixed Port	1*Console port (115200,N,8,1) Power-off alarm switch (FAULT) 2*AC100-240V power input ports 4*1/10G uplink SFP+ fiber ports (Data) 48*10/100/1000Base-T RJ45 ports (Data) 2*DC12-48V power input ports (support anti-reverse protection)
Ethernet Port	Port 1-48 support 10/100/1000Base-T(X) 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	1/10G SFP+ optical fiber port, default no include optical module (optional single-mode/ multi-mode, single fiber/ dual fiber optical module. LC)
Optical Fiber Port Expansion	Turbo overclocking 2.5G optical module expansion and ring network
Optical Cable/ Distance	Multi-mode: 850nm/ 0-500m, 0-300m(10G) 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 802.3ae 10GBase-LR/SR, IEEE 802.3x
Forwarding Mode	Store and Forward (Full Wire Speed)
Switching Capacity	176Gbps (non-blocking)
Forwarding Rate@64byte	131Mpps
CPU	500MHz
DRAM	4G
FLASH	256M
MAC	32K
Buffer Memory	32M
Jumbo Frame	9.6K
LED Indicator	Power: PWR (Yellow), System: SYS (Yellow), 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

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	factory settings
Power Supply	
Total PWR / Input Voltage	60W/ (AC100-240V)
Power Consumption	Standby<35W, Full load<50W
Power Input Interface	Built-in power supply, AC 100~240V 50-60Hz, 0.65A
Power Supply	Alarm switch port, 2*AC power input ports, 2*DC12-48V input ports Dual input power port design: AC power supply priority to support anti-reverse connection protection, and automatically switches to DC connection when power fails.
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)	440*298*44mm
Net /Gross Weight	4.3kg /5.1kg
Installation	Desktop, 1U/19'' cabinet
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 IEC61000-4-12/18(Shockwave): CM 2.5kV, DM 1kV IEC61000-4-4(EFT): Power cable:±4kV, Data cable: ±2kV

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6	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,1-3s
	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	IEEE802.3x flow control (Full duplex)
	Port exception protection mechanism
	Jumbo frame configuration, max 12000byte
	Port real-time flow management (Flow Interval)
	Optical module DDMI real-time digital diagnosis
	Broadcast storm suppression based on port rate
	Port EEE Green Ethernet Energy-Saving configuration and status view
	Limit the rate of packet traffic on incoming and outgoing ports, the mini granularity 16Kbps
L3 Feature	ARP protocol, max 1024 entries
	IPV4/IPV6 static route max 128 entries
	RIPv1/v2, RIPng, OSPFv1/v2, OSPFv3
	L2+ network management function, IPV4/IPV6 dual-stack management
	L3 routing and forwarding, support communication between different network segments and different VLAN
VLAN	VLAN based on MAC, VLAN based on the protocol
	Port configuration of Access, Trunk, Hybrid, GVRP VLAN protocol
	(4K) VLAN based on port, IEEE802.1q, Voice VLAN, QinQ configuration
Port Aggregation	Static aggregation, LACP dynamic aggregation

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|	Max 26 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, 255 Ring at most, max 254 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	Flow-based packet filtering, Priority Mark/ Remark Flow-based redirection, Flow-based rate limiting 8*Output queues of each port, 802.1p/ DSCP priority mapping Diff-Serv QoSQueue Scheduling Algorithm (SP, WRR, SP+WRR)
ACL	ACL distribution based on port and VLAN L2-L4 packet filtering function, matching the first 80 bytes message, and provides ACL definitions 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	IEEE802.1X & MAC address authentication IP-MAC-VLAN-Port binding, MAC learning limit Broadcast storm control, Backup for host datum Mac black holes, IP source protection, Anti-DoS attack SSH 2.0, SSL, Port isolation, ARP message speed limit User hierarchical management and password protection AAA & RADIUS & TACACS+ certification, ARP inspection
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

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	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

298mm

44mm

440mm

A   B   C D
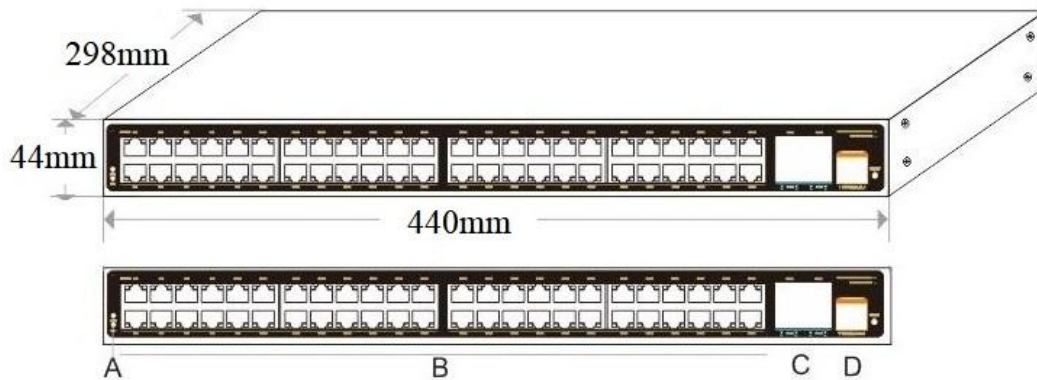
A. Working indicator   B. 48*10/100/1000M RJ45 ports

C. 4*1/10G uplink SFP+ fiber ports   D. Console port

APPLICATION

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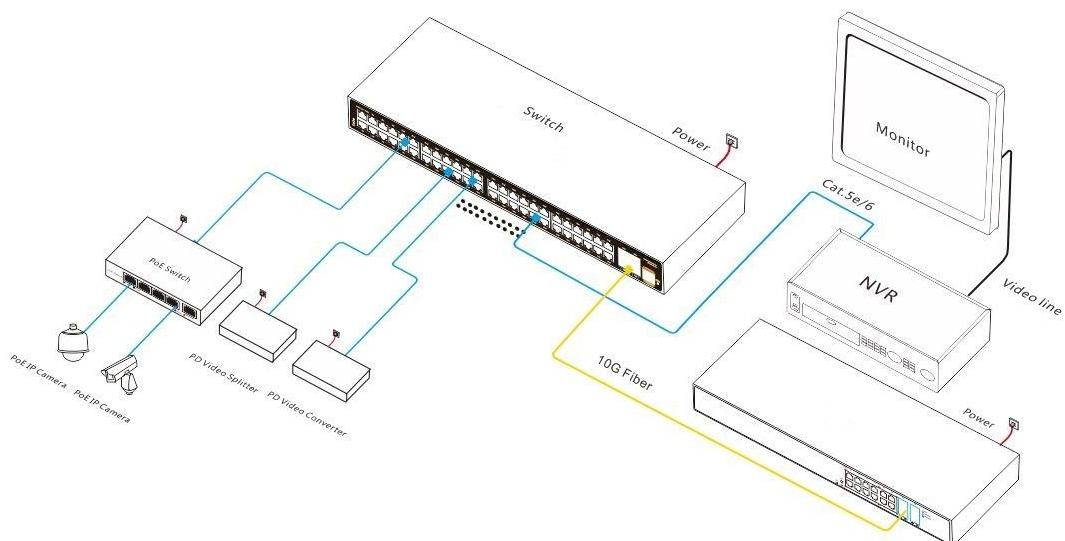
ORDERING INFORMATION

Model	Description	Built-in Power Supply
ONV-IPS36048FM	L2+ managed industrial Ethernet fiber switch with 48*10/100/1000M RJ45 ports and 4*1/10G uplink SFP+ fiber ports. It built-in power supply and supports 2AC+DC power terminal input and 1U/19-inch cabinet installation.	2*60W
Note: The optical module is not included and needs to be purchased separately.		

PACKING LIST

	Content	Qty	Unit
Packing List	52-port 10G uplink L2+ managed industrial Ethernet switch	1	SET
	AC Power Cable	1	PC
	Mounting Kits	1	SET
	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. 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,	PC

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10		LC interface. supports DDM function and hot plugging.	
	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-SC-G	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-SC-G	Industrial SFP optical module, 1.25G single-mode single fiber TX1550nm/ RX1310nm, transmission distance: 20km, SC interface. supports DDM function and hot plugging.	PC
10G Optical Module	6630-G	Industrial SFP+ optical module, 10G multi-mode dual fiber 850nm, transmission distance: 300m, LC interface. supports DDM function and hot plugging.	PC
	7832-G	Industrial SFP+ optical module, 10G single-mode dual fiber 1310nm, transmission distance: 20km, LC interface. supports DDM function and hot plugging.	PC
	7832-33-G	Industrial SFP+ optical module, 10G single-mode single fiber TX1330nm/ RX1270nm, transmission distance: 20km, LC interface. supports DDM function and hot plugging.	PC
	7832-27-G	Industrial SFP+ optical module, 10G single-mode single fiber TX1270nm/ RX13300nm, transmission distance: 20km, LC interface. supports DDM function and hot plugging.	PC

RELATED PRODUCT

Model	Description
ONV-IPS33018FM	L2+ managed industrial Ethernet fiber switch with 16*10/100/1000M RJ45 ports and 2*100/1000M SFP fiber ports. It built-in 30W power

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11	supply and supports 2AC+DC power terminal input and 1U/19-inch cabinet installation.
ONV-IPS33026FM	L2+ managed industrial Ethernet fiber switch with 24*10/100/1000M RJ45 ports and 4*100/1000M SFP fiber combo ports. It built-in 30W power supply and supports 2AC+DC power terminal input and 1U/19-inch cabinet installation.
ONV-IPS36028FM	L2+ managed industrial Ethernet fiber switch with 24*10/100/1000M RJ45 ports and 4*1/10G uplink SFP+ fiber ports. It built-in 60W power supply and supports 2AC+DC power terminal input and 1U/19-inch cabinet installation.
ONV-IPS36036FM	L2+ managed industrial Ethernet fiber switch with 24*10/100/1000M RJ45 ports and 8*100/1000M SFP fiber ports and 4*1/10G uplink SFP+ fiber ports. It built-in 60W power supply and supports 2AC+DC power terminal input and 1U/19-inch cabinet installation.
ONV-IPS36368FM	L2+ managed industrial Ethernet fiber switch with 8*10/100/1000M RJ45 ports and 24*100/1000M SFP fiber ports and 4*1/10G uplink SFP+ fiber ports. It built-in 60W power supply and supports 2AC+DC power terminal input and 1U/19-inch cabinet installation.
ONV-IPS36448FM	L2+ managed industrial Ethernet fiber switch with 12*10/100/1000M RJ45 ports and 28*100/1000M SFP fiber ports and 4*1/10G uplink SFP+ fiber ports. It built-in 60W power supply and supports 2AC+DC power terminal input and 1U/19-inch cabinet installation.

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