Product Datasheet

28-port 10G Uplink Managed Industrial Ethernet Switch
(ONV-IPS36028FM)

OVERVIEW

The ONV-IPS36028FM is a 10G uplink L2+ managed industrial Ethernet fiber switch independently developed by ONV. It has 24*10/100/1000Base-T RJ45 ports and 4*1/10G SFP+ fiber ports. Each port can support wire-speed forwarding.

ONV-IPS36028FM has L2+ full 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. It 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, communication can be quickly restored to ensure uninterrupted communication for important applications. According to application requirements, various application service configurations such as port management, routing address management, port flow control, VLAN division, IGMP, and security policies can be performed through network management methods such as Web, CLI, SNMP, and Telnet. It is suitable for establishing economical, efficient, stable, and reliable communication networks in industrial scenarios such as industry, intelligent transportation, rail transportation, power industry, mining, petroleum, ocean, metallurgy, and green energy construction.

FEATURE

■ **Gigabit access, 10G SFP+ fiber uplink**

◇ Support non-blocking wire-speed forwarding.

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

◇ Supports Gigabit Ethernet port and 10G SFP+ uplink port combination, which enables users to flexibly build networking to meet the needs 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 IEEE802.1Q VLAN, Users can flexibly divide VLAN, Voice VLAN, and QinQ configuration according to their needs.

◇ 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 Snooping V1/V2 multicast protocol IGMP Snooping to meet the high-definition video surveillance and video conference access requirements.

■ **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.

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■ **Stable and reliable**

◇ CCC, CE, FCC, RoHS.

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

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

◇ Low power consumption, No fan, Galvanized steel metal casing and aluminum alloy heat sink combination, and excellent heat dissipation ensure the stable operation of the switch.

■ **Easy O&M management**

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

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

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

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

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

TECHNICAL SPECIFICATION

Model	ONV-IPS36028FM
Interface Characteristics	
Fixed Port	1*AC100-240V input port Alarm switch port (FAULT) 4*1/10G uplink SFP+ fiber ports (Data) 1*Console RS232 port (115200, N, 8,1)

	24*10/100/1000Base-T RJ45 ports (Data)
	2*DC12-48V input ports (Support anti-reverse protection)
Ethernet Port	Port 1-24 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 SFP optical fiber port and 10G SFP+ optical fiber port, default no include optical modules (optional order single-mode / multi-mode, single fiber / dual fiber optical module. LC)
Optical Fiber Port Expansion	Support Turbo overclocking 2.5G optical module expansion and ring network
Optical Cable/ Distance	Multi-mode: 850nm/ 0-500m, 850nm/ 0-300M(10G)
	Single-mode: 1310nm/ 0-40km, 1550nm/ 0-120km.
Chip Parameter	
Network Management Type	L2+
Network Protocol	IEEE802.3 10BASE-T, IEEE802.3i 10Base-T
	IEEE802.3z 1000Base-X, IEEE802.3ae 10GBase-LR/SR
	IEEE802.3u 100Base-TX, IEEE802.3ab 1000Base-T,IEEE802.3x
Forwarding Mode	Store and Forward(Full Wire Speed)
Switching Capacity	176Gbps (non-blocking)
Forwarding Rate@64byte	95.23Mpps
CPU	500MHz
DRAM	2G
FLASH	128M
MAC	32K
Buffer Memory	32M

Jumbo Frame	9.6K
LED Indicator	Power: PWR (Yellow), System: SYS (Yellow) Network: Link/Act (Yellow), Fiber port: L/A (Green)
Reset Switch	Yes, support one key to restore factory settings
Power Supply	
Total PWR / Input Voltage	60W/ (AC100-240V)
Power Consumption	Standby<35W, Full Load<45W
Power Supply	Built-in power supply, AC 100~240V 50-60Hz 0.65A
Power Input Interface	2*DC12-48V power input ports, Alarm switch, 1*AC power input port Dual input power port design: AC power supply priority, support anti-reverse protection, power-off automatic switching DC connection
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	<4.8kg / <5.5kg
Installation	Desktop,19 inch 1U 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
	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)
	IEC61000-4-5(Surge): Power cable: CM±4kV/DM±2kV, data cable: ±4kV
	IEC61000-4-8(Power frequency magnetic field):100A/m,1000A/m,1s to 3s
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 Features

Interface	Port temperature protection settings IEEE802.3x flow control (Full duplex) Broadcast storm control based on port speed Port EEE Green Ethernet energy-saving configuration Limit the rate of packet traffic on incoming and outgoing ports. mini granularity is 64Kbps.
Layer 3 Features	ARP protocol max 1024 entries Static routing/ default routing max 128 entries Support L2+ network management, IPV4/ IPV6 management Support L3 routing and forwarding, and support communication between different network segments and different VLAN
VLAN	Port-based VLAN (4K), IEEE802.1q, QinQ configuration Protocol-based VLAN, VLAN based on MAC, Voice VLAN Three types of port configurations (Access, Trunk, Hybrid)
Port Aggregation	Static aggregation, LACP dynamic aggregation Max 14 aggregation groups, per group support up to 8 ports

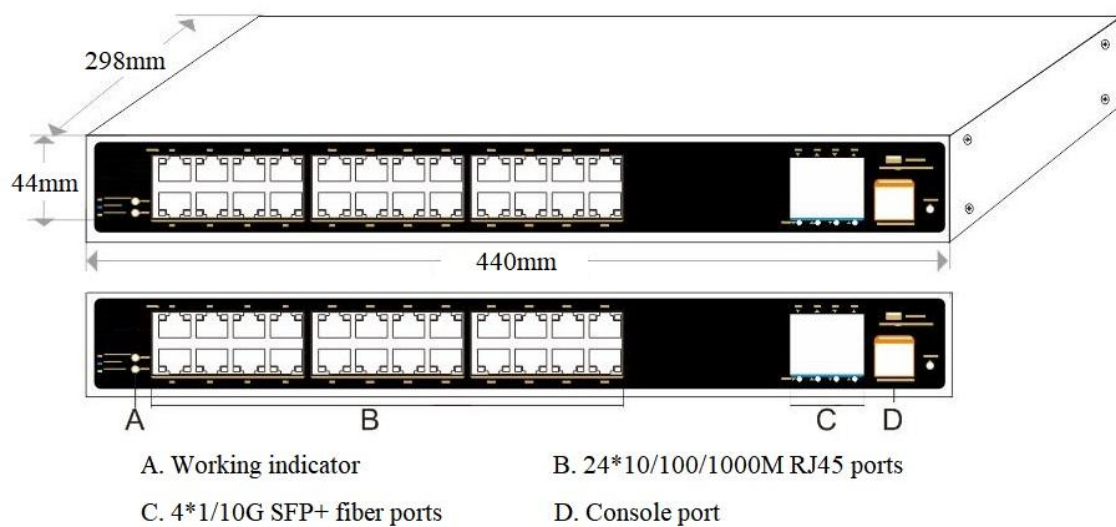| Spanning Tree	STP (IEEE802.1d), RSTP (IEEE802.1w), MSTP (IEEE802.1s)
Industrial Ring Network Protocol	Recovery time less than 20ms G.8032 (ERPS), 255 Ring at most, Max 254 devices per ring.
Multicast	IGMP Snooping v1/v2, Max 1024 multicast groups MLD Snooping v1/v2, Multicast VLAN, User quick exit 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	Port-based, VLAN-delivered ACL L2-L4 packet filtering function can match the first 80 bytes of the packet and provide filtering based on source MAC address, destination MAC address, source IP address, destination IP address, IP protocol type, TCP/UDP port, TCP/UDP port range, and VLAN, etc to define ACL
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	ONV-NMS platform cluster management (LLDP+SNMP) CPU real-time utilization status view, SNMP V1/V2/V3 Console/ AUX Modem/ Telnet/ SSH2.0, CLI configuration Cable length status detection, NTP clock, One-key recovery, LLDP FTP, TFTP, Xmodem, SFTP file upload and download management Ping detection, System work log, Web network management (HTTPS)

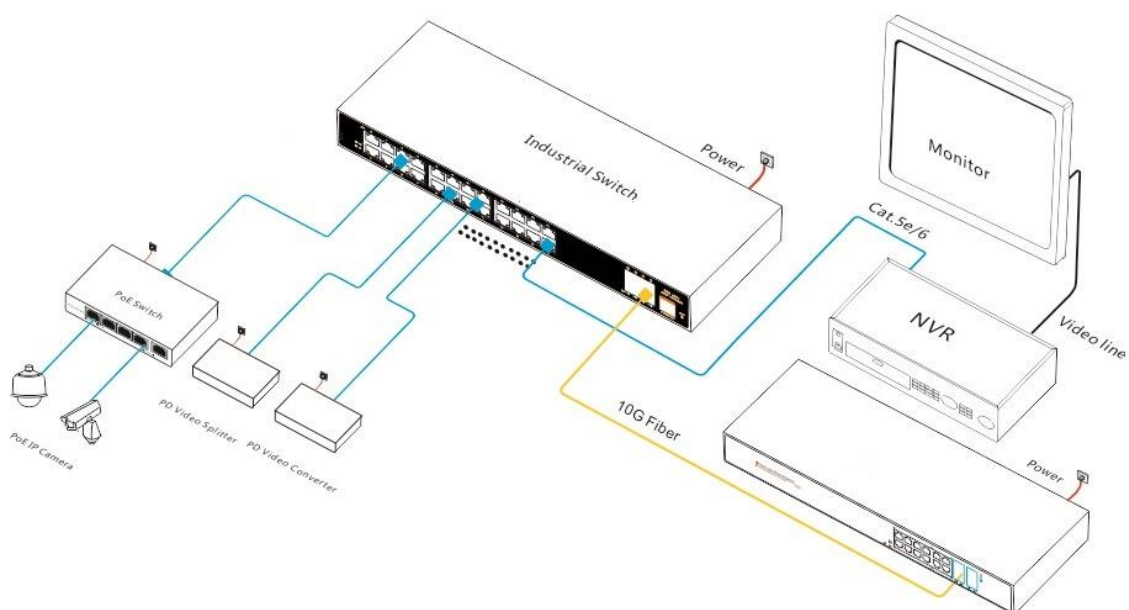| System	Category 5 Ethernet network cable
	Web browser: Mozilla Firefox 2.5 or higher, Google browser chrome V42 or higher, Microsoft Internet Explorer10 or later
	TCP/IP, network adapter, and network operating system (such as Microsoft Windows, Linux, or Mac OS X) installed on each computer in a network

DIMENSION

298mm
44mm
440mm

A. Working indicator   B. 24*10/100/1000M RJ45 ports
C. 4*1/10G SFP+ fiber ports   D. Console port

APPLICATION

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ORDERING INFORMATION

Model	Description	Built-in Power Supply
ONV-IPS36028FM	L2+ managed industrial Ethernet fiber switch with 24*10/100/1000M RJ45 ports and 4*1/10G SFP+ ports. Built-in dual power supply. It support 1U/19-inch cabinet installation and 2AC+DC redundant power input (Phoenix terminal connection).	2*60W

Note: The SFP optical module is not included by default and needs to be purchased separately.

PACKING LIST

	Content	Qty	Unit
Packing List	28-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

10	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
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 slot ports. Built-in 60W power

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	supply. It support 1U/19-inch cabinet installation and 2AC+DC redundant power input (Phoenix terminal connection).
ONV-IPS33026FM	L2+ managed industrial Ethernet fiber switch with 24*10/100/1000M RJ45 ports and 4*100/1000M SFP ports (2 Combo ports). Built-in 60W power supply. Support dual AC or DC power supply input and 1U/19 inch rack installation.
ONV-IPS36036FM	L2+ managed industrial Ethernet fiber switch with 24*10/100/1000M RJ45 ports and 8*100/1000M SFP slot ports and 4*1/10G SFP+ slot ports. Built-in 60W power supply. It support 1U/19-inch cabinet installation and 2AC+DC redundant power input (Phoenix terminal connection).
ONV-IPS36048FM	L2+ managed industrial Ethernet fiber switch with 48*10/100/1000M RJ45 ports and 4*1/10G SFP+ slot ports. Built-in 60W power supply. It support 1U/19-inch cabinet installation and 2AC+DC redundant power input (Phoenix terminal connection).
ONV-IPS36368FM	L2+ managed industrial Ethernet fiber switch with 8*10/100/1000M RJ45 ports and 24*100/1000M SFP slot ports and 4*1/10G SFP+ slot ports. Built-in 60W power supply. It support 1U/19-inch cabinet installation and 2AC+DC redundant power input (Phoenix terminal connection).
ONV-IPS36448FM	L2+ managed industrial Ethernet fiber switch with 12*10/100/1000M RJ45 ports and 28*100/1000M SFP slot ports and 4*1/10G SFP+ slot ports. Built-in 60W power supply. It support 1U/19-inch cabinet installation and 2AC+DC redundant power input (Phoenix terminal connection).

CONTACT US

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