Product Datasheet

36-port 10G Uplink L3 Managed Industrial Ethernet Switch

(ONV-IPS38036FM)

OVERVIEW

The ONV-IPS38036FM is a 10G uplink L3 managed industrial Ethernet fiber switch independently developed by ONV. It has 16*10/100/1000Base-T RJ45 ports and 8*10/100/1000Base-T or 8*100/1000Base-X SFP combo ports and 4*1/10G SFP+ fiber slot ports. Each port can support wire-speed forwarding.

The ONV-IPS38036FM has L3 network management function, supports IPV4/IPV6 management, dynamic routing full line-speed forwarding, complete security protection mechanism, perfect ACL/QoS policy, and rich VLAN functions, easy to manage and maintain. With industry-leading ring network technology. It supports a variety of industrial-grade redundant ring network protocols, and each port can form a ring network, supporting chain ring network, starring network, double starring network, ring network, tangent network ring network, intersecting ring network, coupled ring network, self-healing within 20ms of the ring network. The switches series has high reliability, high security, and high manageability, ensures reliable transmission of key data, supports remote management, and cooperates with the ONV-NMS network management platform for cluster management to achieve no blind spot network management throughout the process. The product completely follows the industrial product design and materials. The

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shell is made of metal material to enhance heat dissipation. It has excellent adaptability to the industrial site environment (including mechanical stability, climate environment adaptability, electromagnetic environment adaptability, etc.). Protection level reaches IP40 and supports 2AC+DC dual redundant power supply, and the MTBF can up to 35 years, 5 years warranty. It is suitable for intelligent transportation, rail transit, power industry, mining, petroleum, and industrial scenes such as shipping, metallurgy, and green energy construction form a cost-effective, stable, and reliable communication network.

FEATURE

■ Gigabit access, 10G 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.

■ 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.

■ 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

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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.

◇ Low power consumption, No fan, aluminum shell.

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

◇ Self-developed power supply, high redundancy design, providing a long term and stable power output.

■ **Easy operation and maintenance management**

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

◇ Support HTTPS, SSLV3, 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 command line (Console, Telnet), SNMP (V1/V2/V3) and other diversified management and maintenance.

TECHNICAL SPECIFICATION

Model	ONV-IPS36036FM	ONV-IPS38036FM
Interface Characteristics		
Fixed Port	2*AC100-240V input ports Alarm switch port (FAULT) 1*Console port (115200, N, 8,1) 4*1/10G uplink SFP+ ports (Data) 16*10/100/1000Base-T RJ45 ports (Data) 8*10/100/1000Base-T RJ45 or 8*100/1000Base-X SFP combo ports (Data) 2 group of DC12-48V input ports (Support reverse polarity protection function)	
Ethernet Port	Port 1-24 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/6 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)	
SFP Port Expansion	Turbo overclocking 2.5G optical module and ring	
Optical Cable/ Distance	Multi-mode: 850nm / 0-500M(1G), 850nm /0-300M(10G), Single-mode: 1310nm / 0-40KM, 1550nm / 0-120KM.	
Chip Parameter		
Network Management Type	L2+	L3
Network Protocol	IEEE802.3 10BASE-T, IEEE802.3i 10Base-T, IEEE802.3u 100Base-TX	

|	IEEE802.3ab 1000Base-T, IEEE802.3z 1000Base-X, IEEE802.3ae 10GBase-LR/SR, IEEE802.3x
Forwarding Mode	Store and Forward(Full Wire Speed)
Switching Capacity	176Gbps (non-blocking)
Forwarding Rate@64byte	107.14Mpps
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 (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	
Total PWR / Input Voltage	60W (AC100-240V)
Power Consumption	Standby<35W, Full Load<45W
Power Input Interface	Built-in power supply, AC 100~240V 50-60Hz 0.65A
Power Supply	2 group of DC12-48V input port Alarm switch port, 1 group of AC power input ports 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	<5.0kg / <5.8kg
Installation	Desktop,19 inch 1U cabinet installation

Certification & Warranty

Lightning Protection	Lightning protection: 6KV 8/20us; Protection level: IP40
	IEC61000-4-2(ESD):±8kV contact discharge,±15kV air discharge
	IEC61000-4-3(RS):10V/m(80~1000MHz)
	IEC61000-4-4(EFT): power cable:±4kV; data cable:±2kV
	IEC61000-4-5(Surge):power cable:CM±4kV/DM±2kV; data cable:±4kV
	IEC61000-4-6(radio frequency transmission):10V(150kHz~80MHz)
	IEC61000-4-8(power frequency magnetic field):100A/m;1000A/m ,1s to 3s
	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
	IEC61000-4-16(common-mode transmission):30V; 300V,1s
	FCC Part 15/CISPR22(EN55022):Class B
	IEC61000-6-2(Common Industrial Standard)
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	IEEE802.3x flow control (full duplex)
	Port exception protection mechanism

	Port real-time flow management (Flow Interval) Broadcast storm suppression based on port rate Optical port SFP module DDMI real-time digital diagnosis Limit the rate of incoming and outgoing packet traffic, with a minimum granularity of 16Kbps and a maximum of 1Gbps Port EEE Green Ethernet Energy-Saving configuration and status view Jumbo frame configuration, the largest 12000byte	
Layer 3 Features	ARP protocol maximum entries 1024 L2+ network management function Static route/default route with maximum entries 128 Layer 3 routing and forwarding, and support communication between different network segments and different VLAN	NG protocol maximum entries 1000 ARP protocol maximum entries 1000 IPV6 management routing entries 1000 Pingv6, Telnetv6, TFTPv6, DNSv6, ICMPv6 IPV6 dynamic routing OSPFv3, BGP+, RIPng VRRP supporting IPV4/IPV6 each support maximum of 255 groups VLANIF interfaces of IPV4/IPV6, each support maximum entries 128 IPV4 dynamic routing, RIPv1/v2, OSPFv2, BGP4+, 4000 routing entries IPV4/IPV6 static routing/default routing each supports maximum entries 128 Support L3 network management

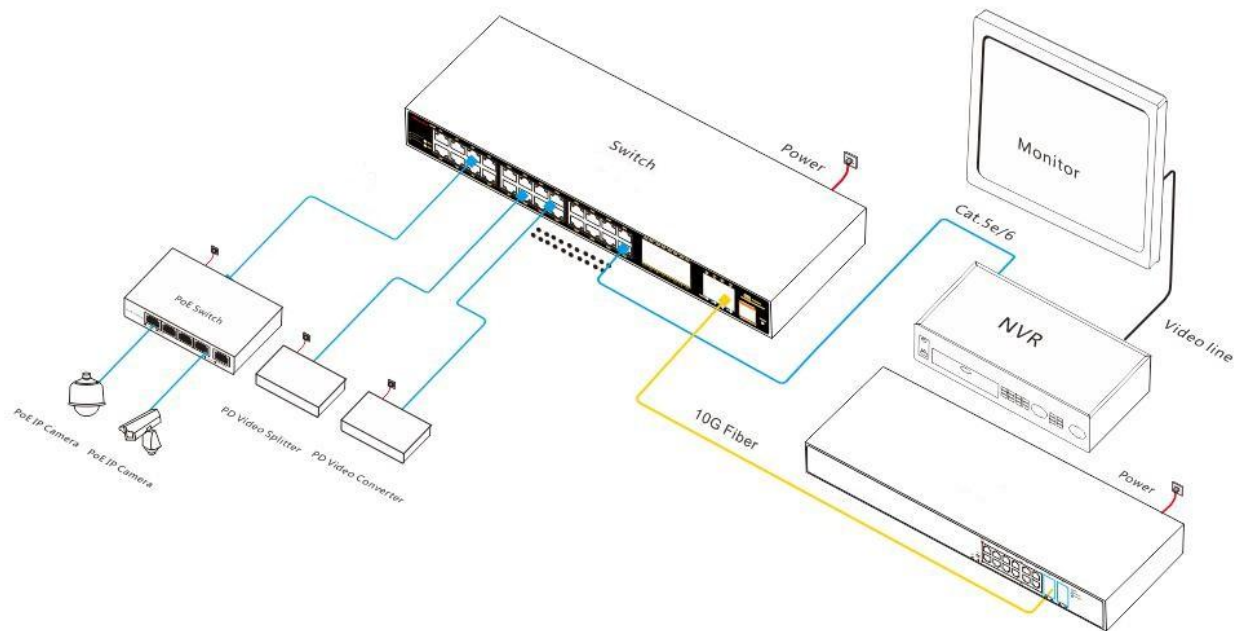|	function, IPV4/IPV6 dual-stack management, IPV4 equivalent routing
	Layer 3 routing and forwarding, and support communication between different network segments and different VLAN
VLAN	Voice VLAN, QinQ configuration, IEEE802.1q
	VLAN based on MAC, VLAN based on the protocol
	4K VLAN based on port, Port configuration of Access, Trunk, Hybrid.
Port Aggregation	LACP dynamic aggregation, static aggregation
	Max 18 aggregation groups and 8 ports per aggregation group
Spanning Tree	STP (IEEE802.1d), RSTP (IEEE802.1w), MSTP (IEEE802.1s)
Industrial Ring Network Protocol	G.8032 (ERPS), Recovery time less than 20ms
	250 Ring at most, Max 250 devices per ring.
Multicast	MLD Snooping v1/v2, Multicast VLAN
	IGMP Snooping v1/v2, Max 1024 multicast groups, Fast log out
Port Mirroring	Bidirectional data mirroring based on port
QoS	Flow-based Rate Limiting
	Flow-based Packet Filtering
	8*Output queues of each port
	802.1p/DSCP priority mapping
	Diff-Serv QoS,Priority Mark/Remark
	Queue Scheduling Algorithm (SP, WRR, SP+WRR)
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, DHCP Relay
Management	Web network management (https)
	Link Layer Discovery Protocol(LLDP)
	Viewing CPU Instant Utilization Status
	NTP clock, One click restore, SNMP V1/V2/V3
	Cable status check, Ping detection, System work log
	ONV NMS platform cluster management (LLDP+SNMP)
	Console/AUX Modem/Telnet/CLI command line configuration
	FTP, TFTP, Xmodem, SFTP file upload and download management
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

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DIMENSION
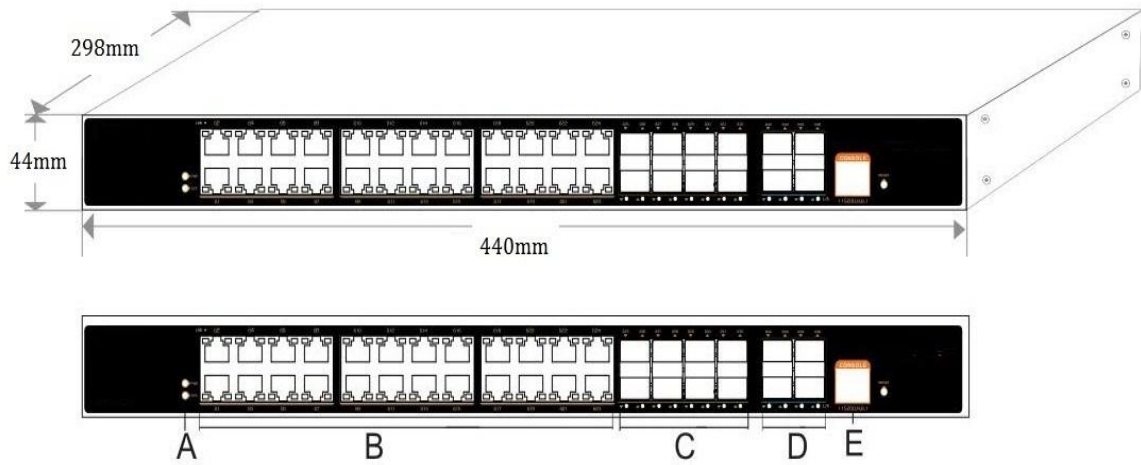
A. Power indicator

B. 24*10/100/1000M RJ45 ports

C. 8*100/1000M SFP ports

D. 4*1/10G SFP+ Ports

E. Console port

APPLICATION

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ORDERING INFORMATION

Model	Description	Built-in Power Supply
ONV-IPS36036FM	L2+ managed industrial Ethernet fiber switch with 16*10/100/1000M RJ45 ports and 8*10/100/1000Base-T RJ45 or 8*100/1000Base-X SFP combo ports and 4*1/10G SFP+ ports. Built-in redundant dual power supply. Support 2AC+DC power terminal input and 1U/19-inch cabinet installation.	2*60W
ONV-IPS38036FM	L3 managed industrial Ethernet fiber switch with 16*10/100/1000M RJ45 ports and 8*10/100/1000Base-T RJ45 or 8*100/1000Base-X SFP combo ports and 4*1/10G SFP+ ports. Built-in redundant dual power supply. Support 2AC+DC power terminal input and 1U/19-inch cabinet installation.	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	36-port 10G uplink L3 managed industrial Ethernet fiber switch	1	SET
	RJ45-DB9 Line	1	PC
	AC Power Cable	1	PC
	Mounting Kits (Hanging Ear)	1	SET
	User Guide	1	PC
	Warranty Card	1	PC

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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
	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-G-SC	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-G-SC	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
10G Optical Module	6630-G	Industrial SFP+ optical module, 10G, Multi-mode dual fiber 850nm, transmission distance: 300m, LC interface, support DDM function,support hot plug and pull.	PC

13	7832-G	Industrial SFP+ optical module, 10G, Single-mode dual fiber 1310nm, transmission distance: 20km, LC interface, support DDM function, support hot plug and pull.	PC
	7832-33-G	Industrial SFP+ optical module, 10G, Single-mode single fiber TX1330nm/RX1270nm , transmission distance: 20km, LC interface, support DDM function, support hot plug and pull.	PC
	7832-27-G	Industrial SFP+ optical module, 10G, Single-mode single fiber TX1270nm/RX13300nm , transmission distance: 20km, LC interface, support DDM function, support hot plug and pull.	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 ports. Built-in redundant dual power supply. support 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 ports (including 2 set Combo ports). Built-in redundant dual power supply. Support 2AC+DC power terminal input and 1U/19-inch cabinet installation.
ONV-IPS38028FM	L3 managed industrial Ethernet fiber switch with 24*10/100/1000M RJ45 ports and 4*1/10G SFP+ ports. Built-in redundant dual power supply. Support 2AC+DC power terminal input and 1U/19-inch cabinet installation.
ONV-IPS38048FM	L3 managed industrial Ethernet fiber switch with 48*10/100/1000M

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14	RJ45 ports and 4*1/10G SFP+ ports. Built-in redundant dual power supply. Support 2AC+DC power terminal input and 1U/19-inch cabinet installation.
ONV-IPS38368FM	L3 managed industrial Ethernet fiber switch with 8*10/100/1000M RJ45 ports and 24*100/1000M SFP ports and 4*1/10G SFP+ ports. Built-in redundant dual power supply. Support 2AC+DC power terminal input and 1U/19-inch cabinet installation.
ONV-IPS38448FM	L3 managed industrial Ethernet fiber switch with 12*10/100/1000M RJ45 ports and 28*100/1000M SFP ports and 4*1/10G SFP+ ports. Built-in redundant dual power supply. Support 2AC+DC power terminal input and 1U/19-inch cabinet installation.

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