Product Datasheet

12-port 10G Uplink Managed Industrial Ethernet Switch
(ONV-IPS56128FM)

OVERVIEW

The ONV-IPS56128FM is a 10G uplink managed industrial Ethernet fiber switch independently developed by ONV. It has 8*10/100/1000Base-T adaptive RJ45 ports and 4*1/10G uplink SFP+ fiber ports. Each port support wire-speed forwarding.

The ONV-IPS56128FM has L2+ network management functions, supports IPV4/ IPV6 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) and (ITU-T G.8032) ERPS (<20ms) to improve link backup and network reliability. When a unidirectional network fails, communication can be quickly restored to ensure uninterrupted communication of important applications. Port management, routing address management, port flow control, VLAN division, IGMP, security policy, and other

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application business configurations can be performed through Web, CLI, SNMP, Telnet, and other network management methods according to application needs. It has excellent adaptability to industrial field environments (including mechanical stability, climate environment adaptability, electromagnetic environment adaptability, etc.). It is suitable for industrial scenarios such as intelligent transportation, rail transportation, power industry, mining, petroleum, shipping, metallurgy, and green energy construction to form an economical, efficient, stable, and reliable communication network.

FEATURE

■ **Gigabit access, uplink 1/10G 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 1/10G uplink SFP+ fiber port combination, which enables users to flexibly build networking to meet the needs of various scenarios.

■ **Strong business processing capability**

◇ Support industrial 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 V1/V2/V3 multicast protocol, IGMP Snooping meets multi-terminal high-definition video surveillance and video conference access requirements.

■ **Security**

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◇ Support port isolation and port broadcast storm suppression.

◇ 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.

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

◇ Low power consumption, aluminum alloy housing, 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.

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

◇ RMON, system log, and port traffic statistics are convenient for network optimization and transformation.

◇ LLDP is convenient for the network management system to query and judge the communication status of the link.

◇ Support diverse management and maintenance methods such as Web network management, CLI command line (Console, Telnet), SNMP (V1/V2/V3), Telnet, etc.

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TECHNICAL SPECIFICATION

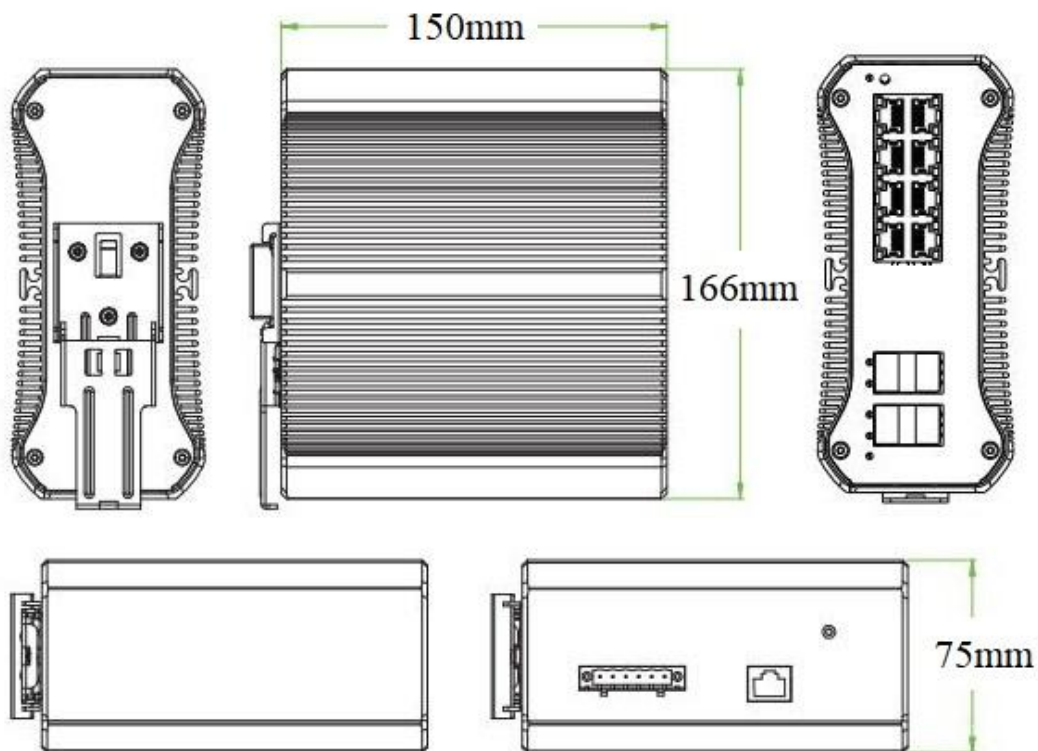| Model	ONV-IPS56128FM
Interface Characteristics	
Fixed Port	1*Console port (115200, N, 8,1) Power failure alarm switch port (FAULT) 4*1/10G uplink SFP+ fiber ports (Data) 8*10/100/1000Base-T RJ45 ports (Data) 2*DC12-48V input ports (supports reverse connection protection)
Ethernet Port	Port 1-8 can 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	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/ 0-550m(1G), 850nm/ 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-SR/LR, IEEE 802.3x
Forwarding Mode	Store and Forward (Full Wire Speed)
Switching Capacity	128Gbps (non-blocking)
Forwarding Rate@64byte	71.42Mpps

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CPU (Hz)	800M
DRAM	1G
FLASH	128M
MAC	16K
Buffer Memory	12M
Jumbo Frame	12K
LED Indicator	System: SYS (Green), Network: Link (Yellow), Fiber port: L/A (Green)
Reset Switch	Yes, press and hold the switch for 10 seconds and release it to restore the factory settings

Power Supply

Power Consumption	Standby<8W, Full load<15W
Input Voltage	DC12-48V, 6 Pin industrial Phoenix terminal, support anti-reverse protection
Power Supply	No, optional 24V/24W or 24V/36W industrial power supply

Physical Parameter

Operation Temp/ Humidity	-40~+75°C, 5%~90% RH Non condensing
Storage Temp/ Humidity	-40~+80°C, 5%~95% RH Non condensing
Dimension (L*W*H)	166*150*75mm
Net /Gross Weight	1.8kg/ 2.1kg
Installation	Desktop, 35mm DIN Rail

Certification& Warranty

Lightning Protection	IEC61000-4-3 (RS):10V/m (80-1000MHz) FCC Part 15/CISPR22 (EN55022): Class A 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): CM2.5kV, DM1kV Protection level: IP40, Lightning protection: 6KV 8/20us 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, 1s-3s
	IEC61000-4-5 (Surge): Power cable: CM±4kV/ DM±2kV, data cable: ±4kV
Mechanical Properties	IEC60068-2-6 (Anti Vibration), IEC60068-2-27 (Anti Shock), IEC60068-2-32 (Free Fall)
Certification	CE mark, commercial, CE/LVD EN62368-1, FCC Part 15 Class A, RoHS
Warranty	5 years, lifelong maintenance.

Network Management Feature

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
	Port EEE Green Ethernet Energy-Saving configuration and status view
	Limit the rate of incoming and outgoing packet traffic, with mini granularity of 16Kbps and max of 1Gbps
L3 Feature	ARP protocol max 1024 entries
	Static route, RIPv1/v2, RIPng, OSPFv1/v2, OSPFv3
	L2+ network management function, IPV4/ IPV6 dual-stack management
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	LACP, Static aggregation, Max 6 aggregation groups and max 8 ports per group.
Spanning Tree	STP BPDU Guard, BPDU filtering and BPDU forwarding
	STP (IEEE802.1d), RSTP (IEEE802.1w), MSTP (IEEE802.1s)
ERPS Ring Network	Support ERPS, Recovery time less than 20ms, ITU-T G.8032

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Multicast	MLD Snooping, Multicast VLAN
	User quick log out, MVR (Multicast VLAN Registration)
	IGMP Snooping v1/v2/v3 and 1024 multicast groups at most
Mirroring	Bidirectional traffic mirroring for basic ports
	one-to-multiple mirroring, supports up to 4 port sessions
QoS	Flow-based Rate Limiting, Flow-based redirection
	Queue Scheduling Algorithm (SP, WRR, SP+WRR)
	Flow-based Packet Filtering, 8*Output queues of each port
	802.1p/ DSCP priority mapping, Diff-Serv QoS, Priority Mark/ Remark
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	Port based IEEE802.1X authentication
	SSL guarantees data transmission security
	Quad binding function of IP+MAC+VLAN+ports
	IP Source Guard function, AAA&RADIUS certification
	Anti DoS attack, Port broadcast message suppression
	Hierarchical user management and password protection
	SSH 2.0 provides a secure encrypted channel for user login
	Host data backup mechanism, ARP intrusion detection function
	IP source address protection, ARP message speed limit function
	Port isolation, MAC address learning limit, MAC address black hole
DHCP	DHCP Client, DHCP Snooping, DHCP Server
Management	Link Layer Discovery Protocol(LLDP)
	One click restore, Web network management (https)
	ONV NMS platform cluster management (LLDP+SNMP)
	Cable status check, Viewing CPU Instant Utilization Status

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8	Ping detection, System work log, NTP clock, SNMP V1/V2/V3
	Console/ AUX Modem/ Telnet/ CLI command line configuration
	FTP, TFTP, Xmodem, SFTP file upload and download management
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

150mm

166mm

75mm

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APPLICATION

ORDERING INFORMATION

Model	Description	Recommended Power Supply
ONV-IPS56128FM	L2+ managed industrial Ethernet switch with 8*10/100/1000M RJ45 ports and 4*1/10G uplink SFP+ fiber ports. It can support dual DC redundant power input (Phoenix terminal connection) and DIN rail mounting.	24W/36W

Note: The optical module and power supply are not included and need to be purchased.

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PACKING LIST

	Content	Qty	Unit
Packing List	12-port 10G uplink managed 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-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

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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/ RX1330nm, transmission distance: 20km, LC 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
36W DIN Rail Industrial Power Supply	GWS-DP36-24	DIN Rail 36W single set of output power supply Input Voltage: AC100V-240V 50-60Hz, 0.56A Output Voltage: DC24V, 1.5A Operation Temperature: -40℃ to +70℃	PC

CONTACT US

ONV Optical Network Video Technologies (Shenzhen) Co., Ltd.

Tel: 0086-755-33376606

Fax: 0086-755-33376608

+86 755 33376606
Optical Network Video Technologies (Shenzhen) Co., Ltd. ONV

WeChat: ONV-PoE-IoT

Email: onv@onv.com.cn

Skype: onv@onv.com.cn

Website: www.onvcom.com

Headquarter Address: Room 1003, Block D, Terra Building, Futian District, Shenzhen

Factory Address: Building B3, Galaxy Artificial Intelligence Industrial Park, No. 333,

Zhongkai 6th Road, Chenjiang Street, Zhongkai High-tech Zone, Huizhou

+86 755 33376606

Optical Network Video Technologies (Shenzhen) Co., Ltd.