Product Datasheet

2.5G Series L3 Managed Industrial Ethernet Switch

OVERVIEW

The 2.5G series industrial Ethernet switches are 10G uplink L3 managed Ethernet switch independently developed by ONV. They include various port specifications such as 4+2, 8+2, and 8+4, designed to provide a highly reliable solution for high-speed network access needs in industrial environments, meeting the stringent deployment requirements of different industrial network scenarios.

High-speed access, 10G uplink

Support 10/100/1000/2500Base-T auto-sensing RJ45 ports, backward compatible with 100M and 1G networks, meeting the high bandwidth transmission needs of terminals such as Wi-Fi 6/7, wireless APs, and 2.5G network cards. All uplink ports use 1/10G SFP+ fiber optic slots, providing a high-bandwidth fiber optic uplink channel to ensure non-blocking data forwarding, adapting to the long-distance high-speed transmission needs in industrial scenarios. Designed specifically for industrial-grade high-density wireless coverage, centralized video surveillance aggregation, and smart

manufacturing access scenarios, it is also widely used in smart grid fields such as photovoltaic power plants, wind farms, and energy storage systems, helping users in factories, industrial parks, mines, ports, transportation, and energy sectors build a stable and reliable industrial network foundation.

Industrial-grade design, stable and durable

Adopting an industrial-grade hardware architecture, it possesses excellent anti-interference and vibration resistance capabilities, meeting the requirements for high-speed interconnection and stable data transmission for various devices in industrial settings. In smart grid scenarios, it can efficiently support network communication for inverter data acquisition terminals, inspection robots, environmental monitoring sensors, security monitoring equipment, etc., enabling stable data interaction between various industrial terminals and upper-level systems, optimizing network architecture, and improving the ease of on-site networking. It is suitable for industrial network scenarios with stringent requirements for 2.5G high-speed access, such as factory automation, smart warehousing, industrial parks, mines, ports, transportation, photovoltaic power plants, wind farms, and energy storage stations.

Layer 3 management, powerful functionality

Supports L3 network management functions, with IPv4/IPv6 dual protocol stack management, dynamic routing forwarding, comprehensive security protection mechanisms, robust ACL/QoS policies, and rich VLAN functions to meet the complex industrial network service configuration requirements. Supports multiple network redundancy protocols: STP/RSTP/MSTP (<50ms) and ERPS (<20ms), improving link backup and network reliability. It can quickly restore communication in the event of a unidirectional network failure, ensuring uninterrupted communication for critical industrial applications. In smart grid ring network configurations, it can ensure millisecond-level self-healing of communication links in photovoltaic areas, wind turbine towers, or energy storage containers in the event of a failure, guaranteeing zero interruption of dispatch commands and monitoring data. Provides multiple network management methods such as Web, CLI, SNMP, and Telnet, allowing flexible configuration of applications such as port management, routing address management, port flow control, VLAN partitioning, IGMP, and security policies. It complies with industrial-grade electromagnetic compatibility

standards, has wide-temperature operating capabilities, and can adapt to long-term stable operation in harsh environments.

FEATURE

■ Advanced hardware architecture and powerful processing capabilities:

◇ Support non-blocking line-speed forwarding for smoother transmission.

◇ Support IEEE 802.3x full-duplex flow control and backpressure half-duplex flow control.

◇ Utilize industry-leading hardware architecture design, offering flexible combinations of 1/2.5G access ports and 10G SFP+ uplink interfaces across the entire series. Meets the high-speed transmission needs of networks of varying sizes, specifically designed for scenarios involving large data transmission, high-performance networking, and high-capacity network deployment. It boasts powerful processing capabilities and flexible port expandability, helping to build an efficient and stable network core.

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

■ Security

◇ Support IP+MAC+Port+VLAN four-way binding function.

◇ Support port isolation and port broadcast storm suppression.

◇ Support 802.1X authentication, provide authentication function for LAN computers, and control the authorization status of controlled ports according to the authentication results.

■ Stable and reliable

◇ CE, FCC, RoHS.

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

◇ Low power consumption, Galvanized steel housing, and excellent heat dissipation to ensure stable operation of the switch.

■ Easy O&M management

◇ Support CPU monitoring, memory monitoring, and Ping 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.

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

Telnet, etc.

MODEL&APPEARANCE

Image	Model	Description
	ONV-IPS57064FM	4*10/100/1000/2500M RJ45 ports and 2*1/10G SFP+ fiber ports
	ONV-IPS57108FM	8*10/100/1000/2500M RJ45 ports and 2*1/10G SFP+ fiber ports
	ONV-IPS57128FM	8*10/100/1000/2500M RJ45 ports and 4*1/10G SFP+ fiber ports

TECHNICAL SPECIFICATION

Model	ONV-IPS57064FM	ONV-IPS57108FM	ONV-IPS57128FM
Fixed Port	4*10/100/1000/2500M RJ45 ports 2*1/10G SFP+ fiber ports	8*10/100/1000/2500M RJ45 ports 2*1/10G SFP+ fiber ports	8*10/100/1000/2500M RJ45 ports 4*1/10G SFP+ fiber ports
Management Port	1 console port		
Reset Switch	1 reset switch		
Forwarding Mode	Store and forward (Full wire speed)		
Switching Capacity	160Gbps (non-blocking)	160Gbps (non-blocking)	240Gbps (non-blocking)
Forwarding Rate@64byte	44.64Mpps	59.52Mpps	89.28Mpps
MAC	16K	16K	32K
Buffer Memory	12M	12M	16M
Jumbo Frame	12K		
Operation TEMP/ Humidity	-40°C~+80°C, 5%~90% RH non-condensing		
Storage TEMP/ Humidity	-40°C~+85°C, 5%~95% RH non-condensing		
Dimension	165*148*54mm	166*150*75mm	166*150*75mm
Net /Gross Weight	0.85kg/ 1.0kg	1.8kg/ 2.1kg	1.8kg/ 2.1kg
Lightning Protection	IEC61000-4-3 (RS):10V/m (80-1000MHz)		

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	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 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)
Input Voltage/ Interface	DC12-57V, 6P industrial Phoenix terminal, support anti-reverse protection.
Power Supply	No, optional 12V/24W or 24V/24W industrial power supply
Installation	Desktop, 35mm DIN Rail
Certification	CE mark, commercial, CE/LVD EN62368-1, FCC Part 15 Class A, RoHS
Warranty	5 years, lifelong maintenance

Network Management Feature	
Interface	Port real-time flow management (Flow Interval) Broadcast storm suppression based on port rate SFP optical module DDMI real-time digital diagnosis Port EEE Green Ethernet Energy-Saving configuration and status view IEEE802.3x flow control (Full duplex), Port exception protection mechanism Limit the rate of packet traffic on incoming and outgoing ports, the mini granularity is 16Kbps and max 1Gbps
L3 Feature	Support IPv4 equal-cost routing. Support ARP protocol, with a maximum of 1000 entries. Support NG protocol, with a maximum of 1000 entries. Support Pingv6, Telnetv6, TFTPv6, DNSv6, and ICMPv6. Support IPv4/IPv6 VRRP, with a maximum of 255 groups for each. Support IPv4/IPv6 VLANIF interfaces, with a maximum of 64 for each. Support IPv4 dynamic routing, RIPv1/v2, and OSPFv2, with 2000 route entries. Support L3 network management functions and IPv4/IPv6 dual-stack management. Support IPv4/IPv6 static routes/default routes, with a maximum of 64 entries for each. Support Layer 3 routing, forwarding, and communication between different network segments and VLANs.
VLAN	Support protocol-based VLAN, Support MAC address-based VLAN Support Voice VLAN, Support QinQ configuration, Support GVRP VLAN protocol

	Support port-based VLANs (4K), IEEE 802.1q, Support Access, Trunk, and Hybrid port configurations
Port Aggregation	LACP dynamic aggregation, Static aggregation, Max 5 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	ERPS ring network, Recovery time less than 20ms, ITU-T G.8032
Multicast	Multicast VLAN, User quick log out, MLD Snooping, MVR (Multicast VLAN Registration), IGMP Snooping v1/v2/v3 and 256 multicast groups at most
Mirroring	Bidirectional traffic mirroring for basic ports one-to-multiple mirroring, supports up to 4 port sessions
QoS	Queue Scheduling Algorithm (SP, WRR, SP+WRR), 8*Output queues of each port, 802.1p/DSCP priority mapping Flow-based Rate Limiting, Flow-based redirection, Flow-based Packet Filtering, Diff-Serv QoS, Priority Mark/Remark
ACL	Support ACL deployment based on port and VLAN. Support L2-L4 packet filtering, can match the first 80 bytes of a packet, 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	SSL, ensuring secure data transmission, SSH 2.0, providing a secure, encrypted channel for user login MAC address black hole, IEEE 802.1X authentication based on ports and MAC addresses, Port isolation IP source address protection, ARP intrusion detection, DoS attack protection, Host data backup mechanism

	MAC address learning limit, User hierarchical management and password protection, ARP packet rate limiting AAA, RADIUS, and TACACS+ authentication (authentication only, authorization and accounting not supported) Port broadcast packet suppressionIP+MAC+VLAN+port four-element binding function, IP Source Guard function
DHCP	DHCP Client, DHCP Snooping, DHCP Server
Management	NTP clock, System work log, One click recovery, View CPU real-time utilization status, Link Layer Discovery Protocol LLDP HTTP, TFTP file upload and download management, SNMP V1/V2C/V3, ONV NMS platform cluster management (LLDP+SNMP) Ping detection, Web network management (HTTPS), Console/ SSH/ Telnet/ CLI command line configuration, Cable length detection
System	Web browser: Google Chrome V42 or later, Mozilla Firefox 2.5 or later, Microsoft Internet Explorer 10 or later, Category 5 or higher Ethernet cable. TCP/IP, network adapter, and network operating system (such as Microsoft Windows, Linux, or Mac OS X) installed on each computer in the network, Category 5 or higher Ethernet cable.

ORDERING INFORMATION

Model	Description
ONV-IPS57064FM	L3 managed industrial Ethernet switch with 4*10/100/1000/2500M RJ45 ports and 2*1/10G SFP+ fiber ports. It can support dual DC redundant power input (Phoenix terminal connection) and DIN rail mounting.
ONV-IPS57108FM	L3 managed industrial Ethernet switch with 8*10/100/1000/2500M RJ45 ports and 2*1/10G SFP+ fiber ports. It can support dual

	DC redundant power input (Phoenix terminal connection) and DIN rail mounting.
ONV-IPS57128FM	L3 managed industrial Ethernet switch with 8*10/100/1000/2500M RJ45 ports and 4*1/10G SFP+ fiber ports. It can support dual DC redundant power input (Phoenix terminal connection) and DIN rail mounting.
Optical Module	**Description**
2630-G	Industrial SFP optical module, 1.25G multi-mode dual fiber 850nm, transmission distance: 550m, 2*LC interface, supports DDM function and hot plugging.
2632-G	Industrial SFP optical module, 1.25G single-mode dual fiber 1310nm, transmission distance: 20km, 2*LC interface, supports DDM function and hot plugging.
2612-T-G	Industrial SFP optical module, 1.25G single-mode single fiber TX1310nm, transmission distance: 20km, 1*LC interface, supports DDM function and hot plugging.
2613-R-G	Industrial SFP optical module, 1.25G single-mode single fiber TX1550nm, transmission distance: 20km, 1*LC interface, supports DDM function and hot plugging.
2633	1.25G SFP optical module to 10/100/1000M RJ45 port (SFP to RJ45), transmission distance: 100m
6630-G	Industrial SFP+ optical module, 10G multi-mode dual fiber 850nm, transmission distance: 300m, 2*LC interface, supports DDM function and hot plugging.
7832-G	Industrial SFP+ optical module, 10G single-mode dual fiber 1310nm, transmission distance: 20km, 2*LC interface, supports DDM function and hot plugging.
7832-33-G	Industrial SFP+ optical module, 10G single-mode single fiber TX1330nm, transmission distance: 20km, 1*LC interface, supports

	DDM function and hot plugging.
7832-27-G	Industrial SFP+ optical module, 10G single-mode single fiber TX1270nm, transmission distance: 20km, 1*LC interface, supports DDM function and hot plugging.
Power Supply	**Description**
GWS-DP24-12	DIN Rail 24W single set of output industrial power supply Input voltage: AC100V-240V 50-60Hz, 0.5A, Output voltage: DC12V, 2.0A, Operation temperature: -40℃ to 70℃
GWS-DP24-24	DIN Rail 24W single set of output industrial power supply Input voltage: AC100V-240V 50-60Hz, 0.5A, Output voltage: DC24V, 1.0A, Operation temperature: -40℃ to 70℃

CONTACT US

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