

## Product Datasheet

# 10-port Gigabit Managed Industrial Ethernet Switch (ONV-IPS33010FM)



## OVERVIEW

The ONV-IPS33010FM is a Gigabit managed industrial Ethernet fiber switch independently developed by ONV. It has 8\*10/100/1000Base-T adaptive RJ45 ports and 2\*100/1000Base-X uplink SFP fiber ports. Each port can support wire-speed forwarding. The ONV-IPS33010FM has L2+ network management functions, supports IPv4 management, static route forwarding, and offers robust security mechanisms, comprehensive ACL/QoS policies, and rich VLAN functionality, making it easy to manage and maintain. It supports RSTP (<50ms) and (ITU-T G.8032) ERPS (<20ms) network redundancy protocols to enhance link backup and network reliability, ensuring uninterrupted communication for critical applications. Depending on actual application needs, it supports port management, route address management, port flow control, VLAN segmentation, IGMP, security policies, and other application service configurations via Web, CLI, SNMP, Telnet, and other network management methods.. It is excellent at adapting 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 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 SFP port combination, which enables users to flexibly build networking to meet the needs of various scenarios.

### ■ Strong business processing capability

- ◇ Support the RSTP for ring networks, eliminating Layer 2 loops and providing link redundancy.
- ◇ Support IEEE 802.1Q VLANs, allowing users to flexibly partition VLANs according to their requirements.
- ◇ Support QoS, with three priority modes-port-based, 802.1P-based, and DSCP-based-and four queue scheduling algorithms: SP, WRR, and WFQ.
- ◇ Support ACLs, enabling packet filtering through the configuration of matching rules and processing actions, and providing flexible security access control policies.
- ◇ Support both static and dynamic aggregation, effectively increasing link bandwidth, achieving load balancing and link redundancy, and enhancing link reliability.
- ◇ Support IGMP V1/V2 multicast protocols and IGMP Snooping, meeting the access requirements for high-definition video surveillance and video conferencing across multiple terminals.

### ■ Security

- ◇ Support port isolation and port broadcast storm suppression.
- ◇ Support 802.1X authentication to provide authentication functions 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 indicator of PWR, SYS, and Link.
- ◇ Low power consumption, no fan, aluminum housing, and excellent heat dissipation to ensure the stable operation of the switch.

### ■ Easy O&M management

- ◇ Support CPU monitoring, memory monitoring, and Ping detection.
- ◇ Port traffic statistics to facilitate network optimisation and upgrades.
- ◇ Support LLDP, enabling network management systems to query and assess link status.
- ◇ Support a variety of management and maintenance methods, including web-based management, CLI (Console, Telnet), SNMP (V1/V2/V3), and Telnet.

## TECHNICAL SPECIFICATION

| Model                            | ONV-IPS33010FM                                                                                                                                                                                              |
|----------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Interface Characteristics</b> |                                                                                                                                                                                                             |
| Fixed Port                       | 1*RS232 Console port (115200, N, 8, 1)<br>8*10/100/1000Base-T RJ45 ports (Data)<br>2*100/1000Base-X uplink SFP fiber ports (Data)<br>2 sets V+, V- redundant DC power port (5P industrial Phoenix terminal) |
| Ethernet Port                    | Ports 1-8 can 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)<br>100BASE-TX: Cat5 or later UTP (≤100 meters)<br>1000BASE-T: Cat5e or later UTP (≤100 meters)                                                                         |
| Optical Fiber Port               | Default does not include optical module (optional single-mode/ multi-mode,                                                                                                                                  |

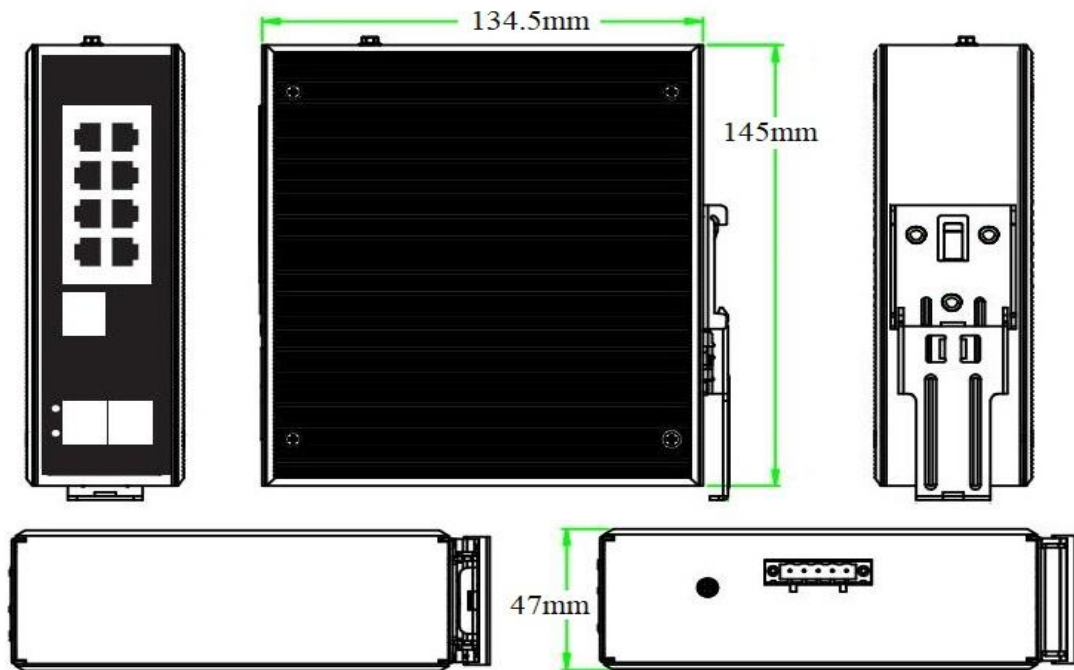
|                           |                                                                                                                                 |
|---------------------------|---------------------------------------------------------------------------------------------------------------------------------|
|                           | single fiber/ dual fiber optical module, LC)                                                                                    |
| Optical Cable/ Distance   | Multi-mode: 850nm/ 0-550m, Single-mode: 1310nm/ 0-40km, 1550nm/ 0-120km.                                                        |
| <b>Chip Parameter</b>     |                                                                                                                                 |
| 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 802.3x |
| Forwarding Mode           | Store and Forward (Full Wire Speed)                                                                                             |
| Switching Capacity        | 36Gbps (non-blocking)                                                                                                           |
| Forwarding Rate@64byte    | 14.88Mpps                                                                                                                       |
| CPU(Hz)                   | 500M                                                                                                                            |
| DRAM                      | 1G                                                                                                                              |
| Flash                     | 128M                                                                                                                            |
| MAC                       | 8K                                                                                                                              |
| Buffer Memory             | 4.1M                                                                                                                            |
| LED Indicator             | Power/ System: SYS (Green), 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                                     |
| <b>Power Supply</b>       |                                                                                                                                 |
| Power Consumption         | Standby<8W, full load<12W                                                                                                       |
| Working Voltage           | DC12-57V, 5P Phoenix terminal connection, supports anti-reverse connection protection                                           |
| Power Supply              | No, optional 24V/24W industrial power supply                                                                                    |
| <b>Physical Parameter</b> |                                                                                                                                 |
| 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 (L*W*H)         | 145*134.5*47mm                                                                                                                  |
| Net /Gross Weight         | 0.85kg/ 1.1kg                                                                                                                   |

|                                    |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
|------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Installation                       | Desktop, 35mm DIN Rail                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
| <b>Certification&amp; Warranty</b> |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
| Lightning Protection               | IEC61000-4-3 (RS):10V/m (80~1000MHz)<br>FCC Part 15/CISPR22 (EN55022): Class A<br>IEC61000-6-2 (Common Industrial Standard)<br>IEC61000-4-9 (Pulsed magnet field): 1000A/m<br>IEC61000-4-10 (Damped oscillation): 30A/m, 1MHz<br>IEC61000-4-12/18 (Shockwave): CM2.5kV, DM 1kV<br>Protection level: IP40, Lightning protection: 6KV 8/20us<br>IEC61000-4-4(EFT): Power cable: ±4kV, data cable: ±2kV<br>IEC61000-4-16 (Common-mode transmission): 30V, 300V, 1s<br>IEC61000-4-2 (ESD): ±8kV contact discharge, ±15kV air discharge<br>IEC61000-4-6 (Radio frequency transmission): 10V(150kHz~80MHz)<br>IEC61000-4-5(Surge): Power cable: CM±4kV/ DM±2kV, data cable: ±4kV<br>IEC61000-4-8 (Power frequency magnetic field): 100A/m, 1000A/m, 1s-3s |
| Mechanical Properties              | IEC60068-2-6 (Anti Vibration), IEC60068-2-32 (Free Fall), IEC60068-2-27 (Anti Shock)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
| Certification                      | CE mark, commercial, CE/LVD EN62368-1, FCC Part 15 Class A, RoHS                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
| Warranty                           | 5 years, lifelong maintenance                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
| <b>Network Management Feature</b>  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
| Interface                          | IEEE802.3x flow control (Full duplex)<br>Port real-time traffic management (Flow Interval)<br>Broadcast storm suppression based on port rate<br>Limit the speed of the message traffic at the inbound and outbound ports, mini granularity is 16Kbps and max 1Gbps                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
| L3 Feature                         | IPV4 static routing/ default routing, L2+ network management                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
| VLAN                               | 4K VLAN based on port, IEEE802.1q, Port configuration of Access, Trunk, Hybrid                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
| Port Aggregation                   | LACP dynamic aggregation, Static aggregation                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |

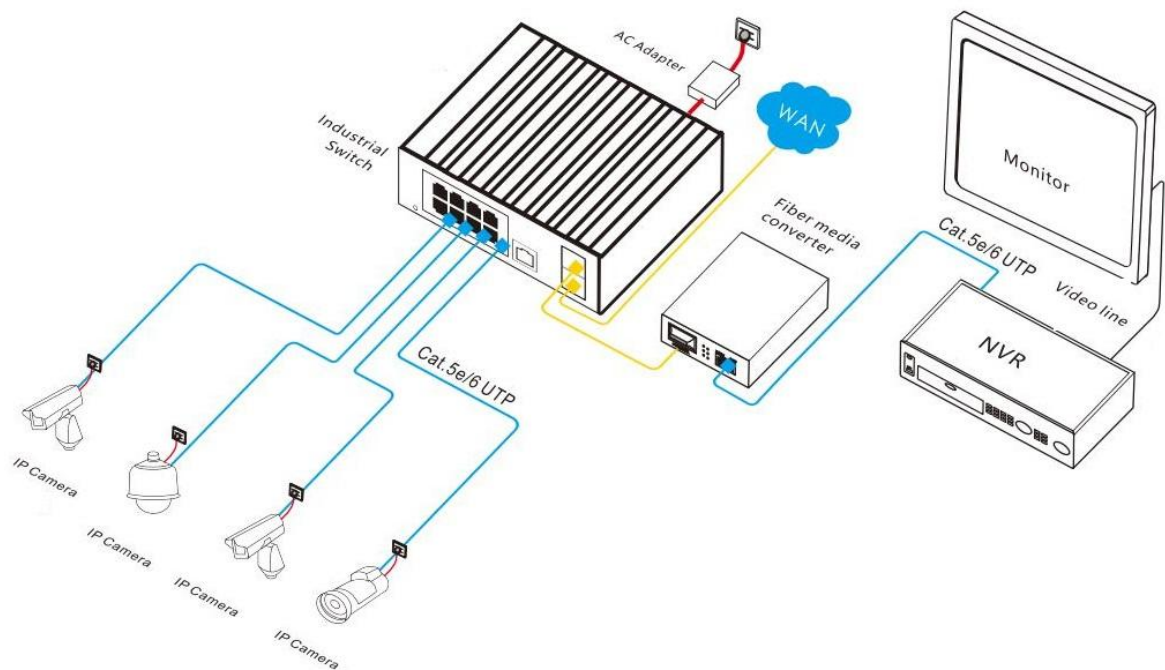
|                       |                                                                                                                                                                                                                                                                                                                                                    |
|-----------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|                       | Max 5 aggregation groups and 8 ports per group                                                                                                                                                                                                                                                                                                     |
| Spanning Tree         | RSTP (IEEE802.1w)                                                                                                                                                                                                                                                                                                                                  |
| Ring Network Protocol | Support ERPS fast ring network function, recovery time less than 20ms                                                                                                                                                                                                                                                                              |
| Multicast             | Multicast VLAN, IGMP Snooping v1/v2, Fast log out                                                                                                                                                                                                                                                                                                  |
| Port Mirroring        | Bidirectional data mirroring based on port                                                                                                                                                                                                                                                                                                         |
| QoS                   | 8*output queues of each port, 802.1p/DSCP priority mapping<br>Diff-Serv QoS, Queue scheduling mechanism (SP, WRR, SP+WRR)                                                                                                                                                                                                                          |
| ACL                   | Support for port-based ACL deployment<br>Support L2 to L4 packet filtering, enabling the definition of ACLs 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, and other criteria.                                                         |
| Security              | User-level access control and password protection<br>Port- and MAC-based IEEE 802.1X authentication<br>Port broadcast suppression, Host data backup mechanism<br>Port isolation, Limit on the number of MAC addresses that can be learned<br>AAA & RADIUS authentication (supports authentication only; does not support authorisation or billing) |
| DHCP                  | DHCP Client, DHCP Snooping                                                                                                                                                                                                                                                                                                                         |
| Management            | SNMP V1/V2C/V3, Web network management<br>NTP clock, CPU real-time utilization status check<br>Console/ Telnet/ CLI command line configuration<br>ONV-NMS platform cluster management (LLDP+SNMP)<br>System work log, Cable status check, Ping Test (CLI)<br>One-click restore, Link Layer Discovery Protocol (LLDP)                               |
| System                | Web browser: Mozilla Firefox 2.5 or higher, Google Chrome V42 or higher,<br>Cat5 and above Ethernet cable<br>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



## APPLICATION



## ORDERING INFORMATION

| Model                                                                                       | Description                                                                                                                                                                          | Recommended Power Supply |
|---------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------|
| ONV-IPS33010FM                                                                              | L2+ managed industrial Ethernet fiber switch with 8*10/100/1000M RJ45 ports and 2*100/1000M uplink SFP fiber ports. It can support dual DC power supply input and DIN Rail mounting. | 24W                      |
| <b>Note:</b> The optical module and power supply are not included and need to be purchased. |                                                                                                                                                                                      |                          |

## PACKING LIST

|              | Content                                            | Qty | Unit |
|--------------|----------------------------------------------------|-----|------|
| Packing List | 10-port Gigabit managed industrial Ethernet switch | 1   | SPC  |
|              | 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<br>TX1550nm/ RX1310nm, transmission distance: 20km, LC<br>interface. supports DDM function and hot plugging. | PC |
| Power<br>Module | 2633     | 1.25G SFP optical module transfers to 10/100/1000M RJ45 port.                                                                                                              | PC |

## POWER SUPPLY

| Product                                    | Model       | Description                                                                                                                                                      | Unit |
|--------------------------------------------|-------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------|------|
| 24W DIN Rail<br>Industrial Power<br>Supply | GWS-DP24-24 | DIN Rail 24W single set of output power supply<br>Input voltage: AC100V~240V 50-60Hz, 0.5A<br>Output voltage: DC24V, 1.0A<br>Operation temperature: -40℃ to +70℃ | PC   |

## CONTACT US



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

Tel: 0086-755-33376606

Fax: 0086-755-33376608

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

