

Product Datasheet

14-port Full Gigabit Managed Industrial PoE Switch

(NVT-IPS33148PFM)



OVERVIEW

The NVT-IPS33148PFM is a full Gigabit L2+ managed industrial PoE fiber switch independently developed by NVT. It supports 10*10/100/1000Base-T adaptive RJ45 ports and 4*100/1000Base-X SFP ports. Ports 1-8 support the IEEE 802.3 af/at PoE standard, and the single-port PoE power reaches 30W. As a PoE power supply device, it can automatically detect and identify powered devices that meet standards and power them through network cables. It can power wireless AP, IP cameras, Internet phones, industrial sensors, and other PoE terminal equipment through network cables to meet the network environment that requires a high-density PoE power supply. It is suitable for intelligent transportation, rail transportation, power industry, mining, petroleum, shipping, etc. Industrial scenarios such as metallurgy and green energy construction establish cost-effective, stable, and reliable communication networks.

The NVT-IPS33148PFM has L2+ network management function, supports IPV4/IPV6 management, static route forwarding, complete security protection mechanism, complete

ACL/QoS policy, and rich VLAN functions, making it easy to manage and maintain. Supports multiple network redundancy protocols STP/RSTP/MSTP (<50ms) and (ITU-T G.8032) ERPS (<20ms) to improve link backup and network reliability. Communication can be quickly restored when a one-way network fails. Ensure uninterrupted communication for important applications. According to application needs, PoE management, port management, routing address management, port flow control, VLAN division, IGMP, security policy, and other application service configurations are performed through network management methods such as Web, CLI, SNMP, and Telnet.

FEATURE

■ Gigabit access, SFP fiber port uplink

- ◇ Support non-blocking wire-speed forwarding.
- ◇ Support full-duplex based on IEEE802.3x and half-duplex based on backpressure.
- ◇ Support Gigabit Ethernet port and Gigabit SFP port combination, which enables users to flexibly build networking to meet the needs of various scenarios.

■ Intelligent PoE power supply

- ◇ IEEE 802.3 af/at PoE standard, without damaging non-PoE devices.
- ◇ PoE network management, realize PoE port power allocation, priority setting, port power status viewing, time scheduling, etc.
- ◇ 8*10/100/1000Base-T RJ45 ports meeting the needs of security monitoring, teleconferencing system, wireless coverage, and other scenarios.
- ◇ Priority system for PoE port, it will supply power to the high priority level port first when the power budget is insufficient and avoid overwork of the device.

■ 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**

- ◇ IEEE802.1Q VLAN, flexible VLAN division, Voice VLAN, and QinQ configuration.
- ◇ Ring network STP/RSTP/MSTP spanning tree protocol eliminates layer 2 loops and realizes link backup.
- ◇ QoS, port-based, 802.1P-based and DSCP-based three priority modes and four queue scheduling algorithms: Equ, SP, WRR, and SP+WRR.
- ◇ ACL to filter data packets by configuring matching rule processing operations and time permissions, and provide flexible security access control policies.
- ◇ Static aggregation and dynamic aggregation effectively increase link bandwidth, achieve load balancing, and link backup, and improve link reliability.
- ◇ Support IGMP V1/V2 multicast protocol and IGMP Snooping to meet the needs of multi-terminal high-definition video surveillance and video conferencing access.

■ **Stable and reliable**

- ◇ CCC, CE, FCC, RoHS.
- ◇ The user-friendly panel can show the device status through the LED indicator of PWR, SYS, Link, PoE.
- ◇ Low power consumption, no fan, aluminum shell, and excellent heat dissipation to ensure the stable operation of the switch.

■ **Easy O&M management**

- ◇ CPU monitoring, memory monitoring, Ping detection, cable detection.
- ◇ HTTPS, SSLV3, SSH V1/V2 and other encryption methods make management more secure.
- ◇ RMON, system logs, and port traffic statistics facilitate network optimization and

transformation.

- ◇ LLDP facilitates the network management system to query and determine the communication status of the link.
- ◇ Web network management, CLI (Console, Telnet), SNMP (V1/V2C/V3), Telnet and other diversified management and maintenance methods.

TECHNICAL SPECIFICATION

Model	NVT-IPS33148PFM
Interface Characteristics	
Fixed Port	Power off alarm switch port (FAULT)
	1*RS232 console port (115200, N, 8,1)
	2*10/100/1000Base-T RJ45 ports (Data)
	4*100/1000Base-X uplink SFP ports (Data)
	8*10/100/1000Base-T PoE ports (Data/Power)
	2 set of V+, V- redundant DC power ports (6 Pin Phoenix terminal)
Ethernet Port	Port 1-10 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)
SFP Slot Port	Gigabit 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
	Single-mode: 1310nm/ 0-40km, 1550nm/ 0-120km
Chip Parameter	

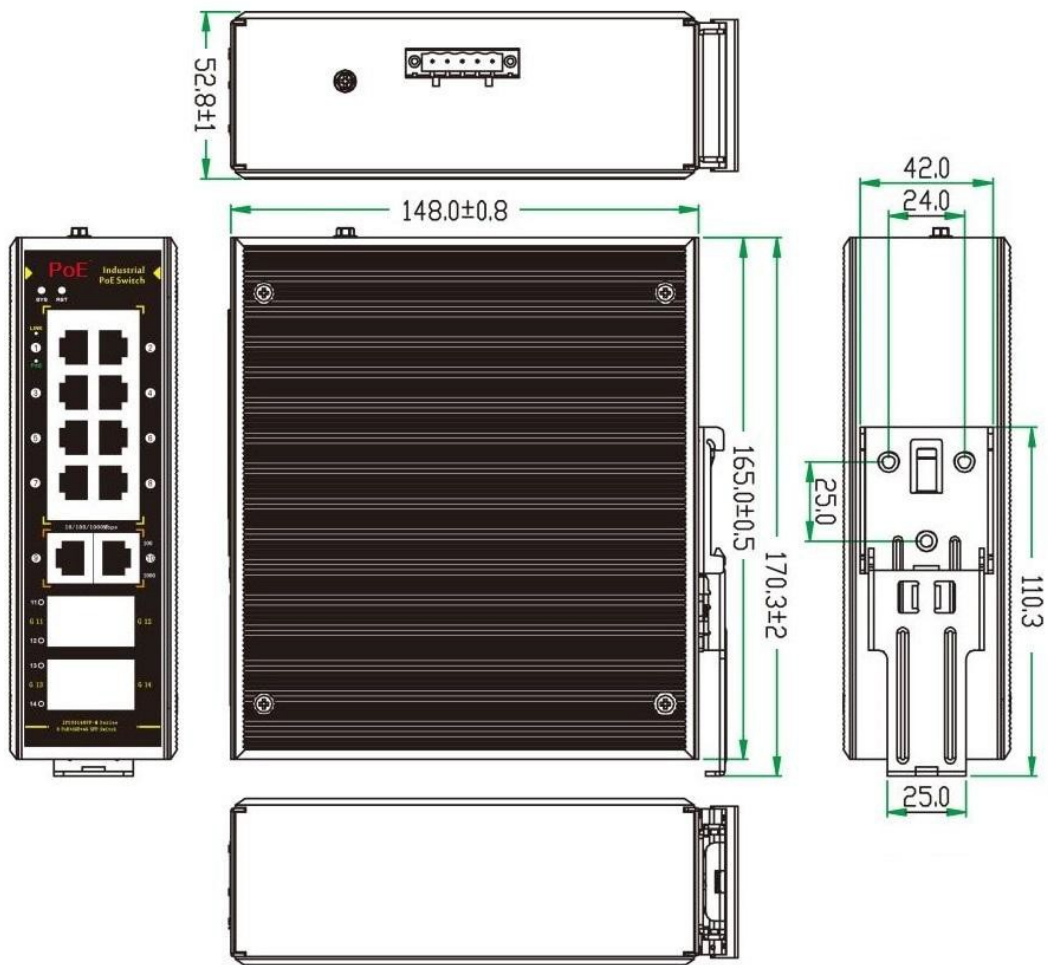
Network Management Type	L2+
Network Protocol	IEEE802.3 10BASE-T, IEEE802.3i 10Base-T, IEEE802.3u 100Base-TX IEEE802.3ab 1000Base-T, IEEE802.3z 1000Base-X, IEEE802.3x
Forwarding Mode	Store and Forward(Full Wire Speed)
Switching Capacity	52Gbps
Forwarding Rate@64byte	20.83Mpps
CPU	416M
DRAM	1G
FLASH	128Mbit
MAC	8K
Buffer Memory	6M
Jumbo Frame	9.6K
LED Indicator	Fiber port: L/A(Green), PoE: PoE (Green) Power/ System: SYS (Green), Network: Link (Yellow)
Reset Switch	Yes, press and hold the switch for 10 seconds and release it to restore the factory settings
PoE & Power Supply	
PoE Port	Port 1 to 8, IEEE 802.3 af/at
PoE Management	Port PoE working status display Port PoE output priority configuration PoE power supply total power limit configuration Power delay start, PoE work and time scheduling Port PoE output power distribution, PoE on/off, af/at power distribution
Power Supply Pin	1/2 (+) 3/6 (-)
Max Power Per Port	30W, IEEE 802.3 af/at
Power Consumption	Standby<10W, Full load af<120W, at<240W

Input Voltage/ Interface	DC48-57V, 5 Pin industrial Phoenix terminal, support anti-reverse protection.
Power Supply	No, optional 48V/120W or 48V/240W industrial power supply
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)	165*148*54mm
Net /Gross Weight	<0.8kg / <1.2kg
Installation	Desktop, DIN rail
Certification & Warranty	
Lightning Protection	Protection level: IP40
	Lightning protection: 6KV 8/20us
	IEC61000-4-3 (RS):10V/m (80~1000MHz)
	FCC Part 15 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): 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)
	IEC61000-4-8 (Power frequency magnetic field): 100A/m, 1000A/m,1s to 3s
IEC61000-4-5 (Surge): Power cable: CM±4kV/ DM±2kV, data cable: ±4kV	
Mechanical	IEC60068-2-6 (anti vibration), IEC60068-2-27 (anti shock)

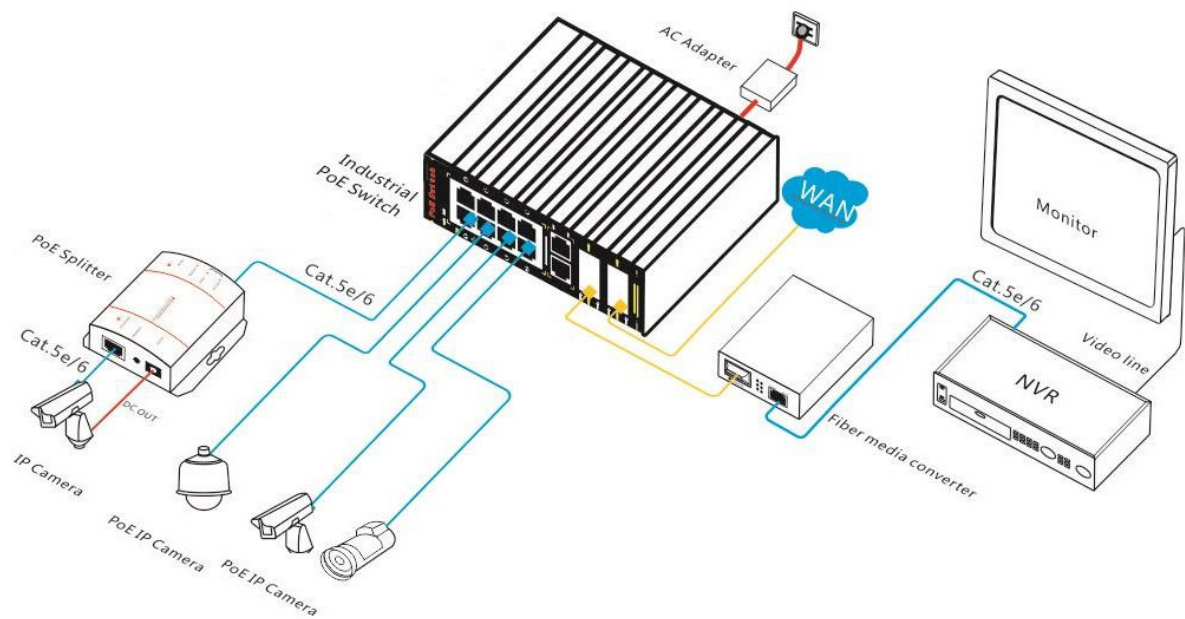
Properties	IEC60068-2-32 (free fall)
Certification	CCC, CE mark, commercial, CE/LVD EN62368-1, FCC Part 15 Class A, RoHS
Warranty	5 years, lifelong maintenance.
Network Management Features	
Interface	Port green Ethernet Energy-saving setting
	Broadcast storm control based on port speed
Interface	IEEE802.3X (Full-duplex), Port temperature protection setting
	Speed limit of message flow in the access port. The min particle size is 64Kbps.
Layer 3 Features	ARP protocol max 1024 entries
	Static routing/ default routing max 128 entries
	Support L2+ network management, IPV4/ IPV6 dual stack management
	Support L3 routing and forwarding, and support communication between different network segments and different VLAN
VLAN	Port configuration of Access, Trunk, Hybrid
	VLAN based on MAC, Voice VLAN, QinQ configuration
	VLAN based on the protocol, 4K VLAN based on port, IEEE802.1q
Port Aggregation	LACP, Static aggregation
	Max 7 aggregation groups and 8 ports per group.
Spanning Tree	STP (IEEE802.1d), RSTP (IEEE802.1w), MSTP (IEEE802.1s)
Industrial Ring	250 Ring at most, Max 250 devices per ring.
Network Protocol	G.8032 (ERPS), Recovery time less than 20ms
Multicast	MLD Snooping v1/v2, Multicast VLAN, Fast log out
	IGMP Snooping v1/v2/v3, Max 1024 multicast groups
Port Mirroring	Bidirectional data mirroring based on port
QoS	Diff-Serv QoS, Priority mark/ remark
	Queue scheduling algorithm (SP, WRR, SP+WRR)
	Flow-based rate limiting, Flow-based packet filtering

	8*Output queues of each port, 802.1p/ DSCP priority mapping
ACL	<p>Port-based Issuing ACL, ACL based on port and VLAN</p> <p>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.</p>
Security	<p>Mac black holes, IP source protection</p> <p>IEEE802.1X & MAC address authentication</p> <p>Broadcast storm control, Backup for host datum</p> <p>SSH 2.0, SSL, Port isolation, ARP message speed limit</p> <p>User hierarchical management and password protection</p> <p>Anti-DoS attack, AAA& RADIUS &TACACS+ certification</p> <p>IP-MAC-VLAN-Port binding, ARP inspection, MAC learning limit</p>
DHCP	DHCP Client, DHCP Snooping, DHCP Server, DHCP Relay
Management	<p>NVT-NMS platform cluster management (LLDP+SNMP)</p> <p>CPU real-time utilization status view, SNMP V1/V2C/V3</p> <p>Console/ AUX Modem/ Telnet/ SSH2.0, CLI configuration</p> <p>Cable length status detection, NTP clock, One-key recovery, LLDP</p> <p>FTP, TFTP, Xmodem, SFTP file upload and download management</p> <p>Ping detection, System work log, Web network management (HTTPS)</p>
System	<p>Category 5 Ethernet network cable</p> <p>Web browser: Mozilla Firefox 2.5 or higher, Google browser chrome V42 or higher, Microsoft Internet Explorer10 or later</p> <p>TCP/IP, network adapter, and network operating system (such as Microsoft Windows, Linux, or Mac OS X) installed on each computer in a network</p>

DIMENSION



APPLICATION



ORDERING INFORMATION

Model	Description	Recommended Power Supply
NVT-IPS33148PFM	L2+ managed industrial PoE fiber switch with 10*10/100/1000M RJ45 ports and 4*100/1000M uplink SFP ports. Port 1-8 can support IEEE 802.3 af/at PoE standard. It can support dual DC power input and DIN rail mounting.	120W/240W

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

PACKING LIST

	Content	Qty	Unit
Packing List	14-port full gigabit managed industrial PoE switch	1	SET
	RJ45-DB9 Line	1	PC
	User Guide	1	PC
	Warranty Card	1	PC