

BI8112FM2G Series

14-port Full Gigabit L2+ Managed Industrial Ethernet Switch

Datasheet



Ideal for:



Telecom



Hotels & Resorts



Universities



Healthcare



Public Places



Airport



Transport



Industries

OVERVIEW

The BI8112FM2G is a full gigabit L2+ managed industrial Ethernet fiber switch. It has 2*10/100/1000M adaptive RJ45 ports and 12*100/1000M uplink SFP fiber ports. Each port can support wire-speed forwarding.

The BI8112FM2G has L2+ network management function, supports IPV4/IPV6 management, static route forwarding, complete security protection mechanism, complete ACL/QoS policy, 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, and can quickly restore communications when a one-way network fails. Ensure uninterrupted communication for important applications. According to the application needs, various application services configurations such as port management, routing address management, port flow control, VLAN division, IGMP, security policy, and other network management methods are carried out through Web, CLI, SNMP, Telnet, and other network management methods. It meets the needs of various industrial Ethernet application environments and is suitable for establishing economical, efficient, stable, and reliable communication networks in industrial scenarios such as intelligent transportation rail transportation, power industry, mining, petroleum, shipping, metallurgy, and green energy construction.

PICTURE





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FEATURES

■ 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 RJ45 port and SFP fiber port combination which enables users to flexibly build networking to meet the needs of various scenarios.

■ Security

- ◇ Port isolation and storm control.
- ◇ 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.

■ Strong business processing capability

- ◇ Support ERPS ring network and STP/RSTP/MSTP to eliminate layer 2 loops and realize link backup.
- ◇ Support IEEE 802.1Q VLAN, users can flexibly divide VLANs according to needs and support Voice VLAN and QinQ configuration.
- ◇ 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.

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■ Stable and reliable

- CCC, 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 shell, 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.
- Support RMON, system log, and port traffic statistics to facilitate network optimization and transformation.
- Support HTTPS, SSLV3, SSHV1/V2, and other encryption methods, making management more secure.
- 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	BI8112FM2G
Interface Characteristics	
Fixed Port	1*Console port (115200,N,8,1) 2*10/100/1000Base-T uplink RJ45 ports (Data) 12*100/1000Base-X uplink SFP fiber ports (Data) 2 set of V+, V- redundant DC power ports (5 Pin Phoenix terminal)
Ethernet Port	Port 1-2 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)

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SFP Slot Port	Gigabit optical fiber interface, 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/ 0-500m, 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 802.3u 100Base-FX, IEEE 802.3ab 1000Base-T, IEEE 802.3z 1000Base-X, IEEE 802.3x
Forwarding Mode	Store and Forward (Full Wire Speed)
Switching Capacity	52Gbps (non-blocking)
Forwarding Rate@64byte	20.83Mpps
MAC	8K
Buffer Memory	6M
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	
Working Voltage	DC12-48V, 5 Pin industrial Phoenix terminal, support anti-reverse protection.

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Power Consumption	Standby<8W, Full load<15W
Power Supply	No, optional 24V/24W 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	1.0kg / 1.2kg
Installation	Desktop, 35mm 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/CISPR22 (EN55022): Class B 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-3s IEC61000-4-5 (Surge): Power cable: CM±4kV/ DM±2kV, Data cable: ±4kV
Mechanical Properties	IEC60068-2-6 (Anti Vibration), IEC60068-2-32 (Free Fall), IEC60068-2-27 (Anti Shock)

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Mechanical Properties	IEC60068-2-6 (Anti Vibration), IEC60068-2-32 (Free Fall), IEC60068-2-27 (Anti Shock)
Certification	CCC, CE mark, commercial, CE/LVD EN62368-1, FCC Part 15 Class B, RoHS
Warranty	5 years, lifelong maintenance.

Network Management Feature

Interface	Port temperature protection settings IEEE 802.3x flow control (Full duplex) Broadcast storm control based on port speed Port EEE Green Ethernet energy-saving configuration Limit the speed of the message traffic at the inbound and outbound ports, with mini granularity of 64Kbps
L3 Feature	ARP protocol, max 1024 entries Static route/ default route, max 128 entries L2+ network management function, IPV4/IPV6 dual-stack management L3 routing and forwarding, support communication between different network segments and different VLAN
VLAN	Port configuration of Access, Trunk, Hybrid VLAN based on MAC, VLAN based on the protocol (4K) VLAN based on port, IEEE802.1q, Voice VLAN, QinQ configuration
Port Aggregation	LACP dynamic aggregation, static aggregation Max 7 aggregation groups, per group support up to 8 ports
Spanning Tree	STP (IEEE802.1d), RSTP (IEEE802.1w), MSTP (IEEE802.1s)



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Multicast	IGMP Snooping v1/v2/v3, Max 1024 multicast groups MLD Snooping, Multicast VLAN, User quick exit mechanism
Port Mirroring	Bidirectional data mirroring based on port
QoS	Queue Scheduling Algorithm (SP, WRR, SP+WRR) Flow-based rate limiting, Flow-based packet filtering Flow-based redirection, Diff-Serv QoS, Priority Mark/ Remark 8*Output queues of each port, 802.1p/DSCP priority mapping
ACL	ACL issued based on port and VLAN L2-L4 packet filtering function can match the first 80 bytes of the message and provide ACL definition 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 MAC address the learning number limit SSL ensures data transmission security Port isolation, MAC address the black hole IP+MAC+VLAN+port four-way binding function User hierarchical management and password protection AAA & RADIUS & TACACS+ certification, ARP inspection IP source address protection, Host data backup mechanism SSH 2.0 provides a secure encrypted channel for user login DoS attack prevention, Port broadcast message suppression ARP message rate limit function, ARP intrusion detection function

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DHCP	DHCP Client, DHCP Snooping, DHCP Server, DHCP Relay
Management	<p>System work log, Link Layer Discovery Protocol</p> <p>NMS platform cluster management (LLDP+SNMP)</p> <p>NTP clock, Cable length detection, SNMP V1/V2/V3</p> <p>Ping detection, Web network management (HTTPS)</p> <p>One click recovery, View CPU real-time utilization status</p> <p>FTP, TFTP, Xmodem, SFTP file upload and download management</p> <p>Console/ AUX Modem/ Telnet/ SSH2.0 CLI command line configuration</p>
System	<p>Web browser: Mozilla Firefox 2.5 or higher, Google Chrome V42 or higher, Cat5 and above Ethernet cable</p> <p>TCP/IP, network adapter, and network operating system (such as Microsoft Windows, Linux, Mac OS X) installed on each computer in the network</p> <p>Cat5 and above Ethernet cable</p>

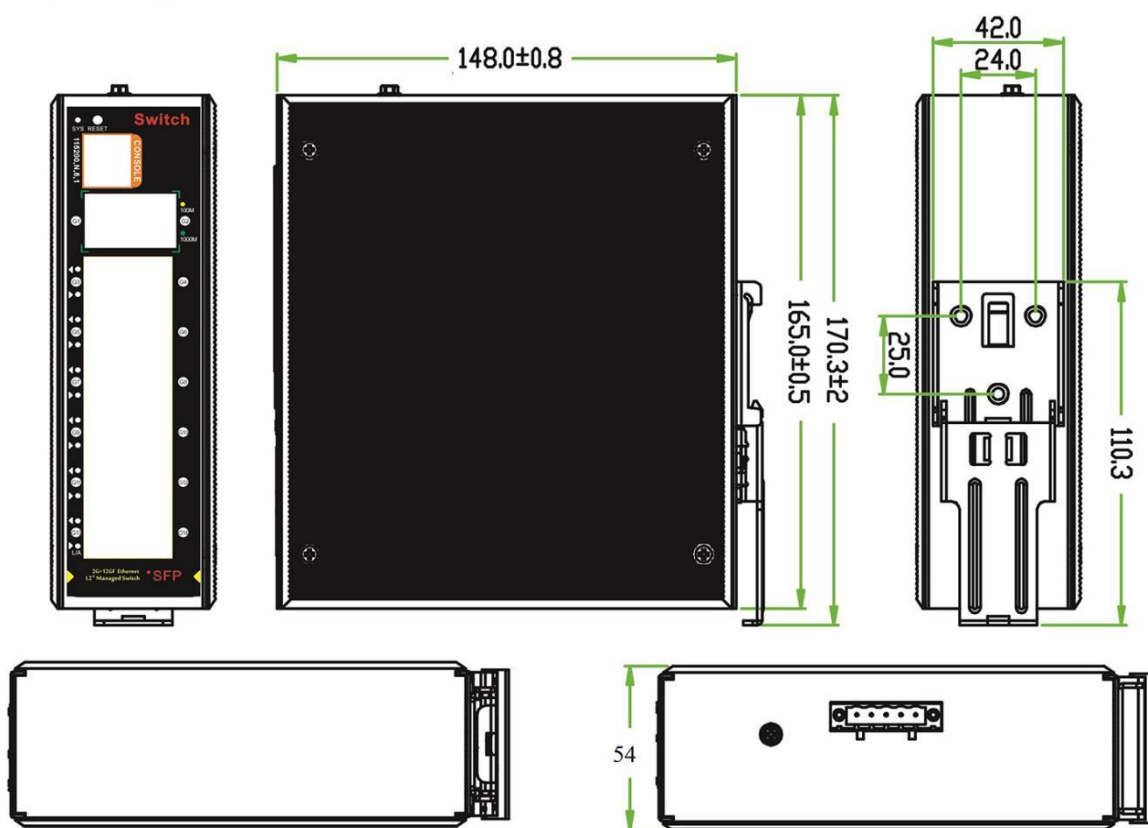
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DIMENSIONS



ORDERING INFORMATION

Model	Description
BI8112FM2G	L2+ managed industrial Ethernet fiber switch with 2*10/100/1000M RJ45 ports and 12*100/1000M uplink SFP fiber ports. It can support dual DC power supply input and DIN rail mounting.

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

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PARKING LIST

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



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