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FS IES3220 Series Switches Data Sheet

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Product overview

FS IES3220 series adopts industrial-grade high-reliability devices and industrial-grade hardware structure design, complies with a wide range of industrial Ethernet standards and specifications, and can be widely used in complex environmental scenarios such as urban monitoring, transportation, power energy, and smart manufacturing factories.

The IES3220-4T2F features 4x 10/100/1000BASE-T copper ports, 2x 1000BASE-X SFP ports, which is designed especially for a broad spectrum of industrial and extended enterprise connectivity needs. Equipped with an IP41 rated metal enclosure, it can operate within a wide temperature range of -40 to 75° C (-40 to 167° F). This switch is ideal for harsh environments, and can be widely used in energy, transportation, industrial production, environmental protection, and industrial industry. This layer 2 industrial managed switch supports enhanced L2+ functions such as 802.1Q VLAN and port-based VLAN, QoS, QinQ, LACP link aggregation, etc., which can meet the requirements of many scenarios in industrial environments.

The IES3220-8T4F features 8x 10/100/1000BASE-T copper ports, 4x 1000BASE-X SFP ports, which is designed especially for a broad spectrum of industrial and extended enterprise connectivity needs. Equipped with an IP41 rated metal enclosure, it can operate within a wide temperature range of -40 to 75° C (-40 to 167° F). This switch is ideal for harsh environments, and can be widely used in energy, transportation, industrial production, environmental protection, and industrial industry. This layer 2 industrial managed switch supports enhanced L2+ functions such as 802.1Q VLAN and port-based VLAN, QoS, QinQ, LACP link aggregation, etc., which can meet the requirements of many scenarios in industrial environments.

The IES3220-8T4F-U features 8x 10/100/1000BASE-T PoE++ ports, 4x 1000BASE-X SFP ports, which is designed especially for a broad spectrum of industrial and extended enterprise connectivity needs. Equipped with an IP41 rated metal enclosure, it can operate within a wide temperature range of -40 to 75° C (-40 to 167° F). This switch is ideal for harsh environments, and can be widely used in energy, transportation, industrial production, environmental protection, and industrial industry. All Gigabit PoE+ ports support a power budget of up to 360W for PoE/PoE+, it is ideal for connecting PoE-powered end devices such as IP cameras, phones, wireless access points, sensors, and more. This layer 2 industrial managed switch supports enhanced L2+ functions such as 802.1Q VLAN and port-based VLAN, QoS, QinQ, LACP link aggregation, etc., which can meet the requirements of many scenarios in industrial environments.

Product highlights

- Support Transparent Transmission for PROFINET, EtherNet/IP, Modbus TCP
- Robust IP41 Aluminum Metal Enclosure for Use in Industrial Environments
- Support IEEE 1588v2 PTP (Precision Time Protocol) to Achieve Precise Synchronization
- Operate Stably Under the Temperature Range of -40 to 75° C
- DIN-rail Mounting for Efficient Use of Cabinet Space
- Support MRP, RRPP, ERPS, LACP, DHCP Server, QoS, ACL, etc.
- Support CLI/WEB/SSH/Telnet/SNMP for Easy Network Management
- Marvell AC3 Chip, Up to 8 PoE++ Ports, 360W PoE Power Budget (Only for IES3220-8T4F-U Switch)

Platform details

Switch models and configurations

Figures 1 through 3 show the FS IES3220 series switches.



Figure 1.

IES3220-4T2F, 4-Port Gigabit Ethernet L2+ Managed Industrial Switch, 4 x 10/100/1000MBASE-T, with 2 x 1Gb SFP, -40 to 75° C Operating Temperature



Figure 2.

IES3220-8T4F, 8-Port Gigabit Ethernet L2+ Managed Industrial Switch, 8 x 10/100/1000MBASE-T, with 4 x 1Gb SFP, -40 to 75° C Operating Temperature

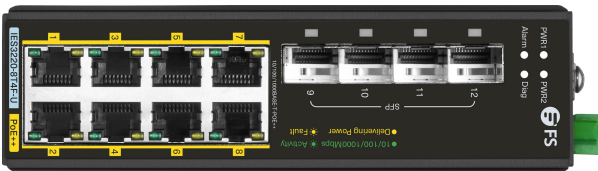


Figure 3.

IES3220-8T4F-U, 8-Port Gigabit Ethernet L2+ Managed Industrial PoE++ Switch, 8 x PoE++ Ports@360W, with 4 x 1Gb SFP, -40 to 75° C Operating Temperature

Switch configurations and port density

Table 1 shows the FS IES5120 series configurations and port density.

Table 1. Switch configuration and port density

FS P/N	IES3220-4T2F	IES3220-8T4F	IES3220-8T4F-U
Description	IES3220-4T2F, 4-Port Gigabit Ethernet L2+ Managed Industrial Switch, 4 x 10/100/1000MBASE-T, with 2 x 1Gb SFP, -40 to 75° C Operating Temperature	IES3220-8T4F, 8-Port Gigabit Ethernet L2+ Managed Industrial Switch, 8 x 10/100/1000MBASE-T, with 4 x 1Gb SFP, -40 to 75° C Operating Temperature	IES3220-8T4F-U, 8-Port Gigabit Ethernet L2+ Managed Industrial PoE++ Switch, 8 x PoE++ Ports@360W, with 4 x 1Gb SFP, -40 to 75° C Operating Temperature

Port

1G port density	6	12	12
1G port density	6	12	12
Console port	1	1	1

Memory and processor

Switch chip	Marvell AC3	Marvell AC3	Marvell AC3
SDRAM	512MB	512MB	512MB
Flash memory	256MB	256MB	256MB
Latency	GE: 5μs 10GE: 3μs	GE: 5μs 10GE: 3μs	GE: 5μs 10GE: 3μs
Packet buffer	1.5Mbits	1.5Mbits	1.5Mbits

Note:

RJ45 ports can be used as 10/100/1000M ports for Ethernet connection.
SFP ports can be used for 1G connection.

Power supplies and fans

Table 2 provides more details on the FS IES3220 series power supplies and fan specifications.

Table 2. Power supply and fan specifications

Description	IES3220-4T2F	IES3220-8T4F	IES3220-8T4F-U
Power supply	Dual 1+1 redundant power supplies (DC)	Dual 1+1 redundant power supplies (DC)	Dual 1+1 redundant power supplies (DC)
Fan number	Fanless	Fanless	Fanless
Max. power consumption	11W	17W	Single Power: 205W (160W with PoE) Dual Power: 420W (360W with PoE)
Power max rating	-	-	-
Input-voltage range and frequency	• Rated voltage range: 24-48 VDC; 50-60Hz		Dual-Route Redundant Input: 53-57 VDC (Maximum Range 48-57V) 48-57V for PoE 52-57V for PoE+ 53-57V for PoE++
PoE standard	-	-	IEEE 802.3af/at/bt
PoE power budget	-	-	360W

Switch performance

Table 3 shows performance specifications for the FS IES3220 series switches.

Table 3. Performance specifications

Performance for all IES3220 Series Switches	IES3220-4T2F	IES3220-8T4F	IES3220-8T4F-U
Switching capacity	12Gbps	24Gbps	24Gbps
Forwarding rate	8.93Mpps	17.86Mpps	17.86Mpps
Total number of MAC addresses	16K	16K	16K
Total number of IPv4 routes (indirect routes)	1K	1K	1K
Total number of IPv4 multicast routes	N/A	N/A	N/A
QoS ACL scale	512	512	512
VLAN IDs	4K	4K	4K
Jumbo frame	10000 bytes	10000 bytes	10000 bytes

Platform benefits

Table 4 lists the software spotlights for the FS IES3220 series switches.

Table 4. Software spotlights

Functionality	Description
IPv4/IPv6 Dual-Stack	Support IPv4/IPv6 static routing Support RIP/RIPng, OSPF Support VRRP Support BFD FOR VRRP Support BFD FOR IPV4 Support BFD FOR IPv6
Multicast Efficiency	Support IGMP v1/v2/v3 Support IPv4 IGMP snooping Support IPv6 MLD snooping Support Multicast VLAN Support MVRP (Alternatives to GVRP/GARP)

Functionality	Description
Layer 2 Ring Protection Protocol	Support STP/RSTP/MSTP Support STP root protection Support BPDU protection Supports G.8032 Ethernet ring protection switching (ERPS) with a self-healing time of 30ms Supports RRPP (Rapid Ring Protection Protocol) with a self-healing time of 30ms Supports IEC 62439-2 MRP (Media Redundancy Protocol) with a self-healing time of less than 20ms
Industrial Ethernet Protocols	Support transparent transmission for PROFINET, EtherNet/IP and Modbus TCP Supports PTP Sync
ACL&QOS	Supports packet filtering functions Supports flexible queuing scheduling algorithms; settings can be applied based on both ports and queues Supports multiple modes such as SP (Strict Priority), WRR (Weighted Round Robin), and SP+WRR (Combination of Strict Priority and Weighted Round Robin) Supports port-based rate limiting Supports flow-based redirection Supports time-based functions Support level 2/level 3/level 4 ACL Support IPv4/IPv6 ACL Support Ingress ACL
Secure And Simplified Access	Supports hierarchical user management and password protection Supports AAA authentication Supports Radius authentication Supports SSH 2.0 Supports port isolation Supports port security features Supports MAC address authentication Supports HTTPS Supports PKI (Public Key Infrastructure). Supports attack source tracing for ARP packets. Supports IP Source Guard (including both IPv4 and IPv6) Supports DAI, protection against ARP attacks and DDoS Supports Secure Boot
Error-Free Network Configuration	Supports remote configuration via Telnet Supports configuration through a console port Supports SNMP Supports RMON for alarms, events, and historical data Supports SDN/OpenFlow, compliant with the OpenFlow 1.3 standard Supports cloud-based management. Supports web-based network management Supports system logging Supports hierarchical alarms Supports IRF2 stacking technology Supports NTP Supports power and temperature alarms

Product specifications

Table 5 shows the product specifications for the FS IES3220 series switches.

Table 5. Product specifications

Description	IES3220-4T2F	IES3220-8T4F	IES3220-8T4F-U
Environmental			
Operating temperature	-40 to 75° C (-40 to 167° F)	-40 to 75° C (-40 to 167° F)	-40 to 75° C (-40 to 167° F)
Storage temperature	-40 to 85° C (-40 to 185° F)	-40 to 85° C (-40 to 185° F)	-40 to 85° C (-40 to 185° F)
Operating humidity	5% to 95% (Non-condensing)	5% to 95% (Non-condensing)	5% to 95% (Non-condensing)
Storage humidity	5% to 95% (Non-condensing)	5% to 95% (Non-condensing)	5% to 95% (Non-condensing)
Physical specifications			
Dimensions (HxWxD)	5.91"x1.73"x5.19" (150x44x130mm)	5.91"x1.73"x5.19" (150x44x130mm)	5.91"x1.73"x5.19" (150x44x130mm)
Weight	8.82 lbs (4kg)	8.82 lbs (4kg)	11.02 lbs (5kg)
Electrical			
Voltage (auto ranging)	192-288 VDC	192-288 VDC	53-57 VDC
Frequency	50-60Hz	50-60Hz	50-60Hz

Description	IES3220-4T2F	IES3220-8T4F	IES3220-8T4F-U
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Connectors

Connectors and cabling	- SFP transceivers: LC fiber connectors (single-mode or multimode fiber) - FS stacking ports: copper-based FS cabling - Ethernet management port: RJ-45 connectors, 4-pair Cat5 UTP cabling - Management console port: RJ-45-to-DB9 cable for PC connections
Power connectors	- Customers can provide power to a switch by using the internal power - Internal power supply connector: The internal power supply is an auto-ranging unit. It supports input voltages of 53-57 VDC or 100-240 VAC. Use the supplied DC/AC power cord to connect the DC/AC power connector to an DC/AC power outlet

Standards

Standards	IEEE 802.3af, IEEE 802.3at, IEEE 802.3bt, 802.3x, 802.3ad, 802.1P, 802.1Q, 802.1X
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Quality certification

At FS, our Quality Commitment lies in all aspects of processes, resources, and methods that enable us to build superior networks for our customers. Through a quality policy focusing on continuous improvement of products and services, we're able to achieve the highest levels of satisfaction for our customers. To that end, every FS employee is accountable for contributing to the value of the products and services we deliver.

Figure 4 shows some of the authoritative certifications obtained by FS IES3220 Series Switches.



Figure 4.

Warranty, service and support

FS IES3220 Series Switches enjoy 5 years limited warranty against defects in materials or workmanship. For more information for FS Returns & Refunds policy, visit <https://www.fs.com/policies/warranty.html> or https://www.fs.com/policies/day_return_policy.html

FS provides a personal account manager, free professional technical support, and 24/7 live customer service to each customer.

- Professional Lab: Test each product with the latest and advanced networking equipment.
- Free Technical Support: Provide free & tailored solutions and services for your businesses.
- 80% Same-day Shipping: Immediate shipping for in-stock items.
- Fast Response: Direct and immediate assistance from an expert.

For more information, visit https://www.fs.com/service/fs_support.html

Ordering information

Table 6 provides the ordering information for IES3220 series switches.

Table 6. Ordering information

FS P/N	Product description
Switch hardware	
IES3220-4T2F	IES3220-4T2F, 6-Port Gigabit Ethernet L2+ Managed Industrial Switch, 4 x 10/100/1000MBASE-T, with 2 x 1Gb SFP, -40 to 75° C Operating Temperature
IES3220-8T4F	IES3220-8T4F, 12-Port Gigabit Ethernet L2+ Managed Industrial Switch, 8 x 10/100/1000MBASE-T, with 4 x 1Gb SFP, -40 to 75° C Operating Temperature
IES3220-8T4F-U	IES3220-8T4F-U, 12-Port Gigabit Ethernet L2+ Managed Industrial PoE++ Switch, 8 x PoE++ Ports@360W, with 4 x 1Gb SFP, -40 to 75° C Operating Temperature

Additional information

For more information about the IES3220 Series Switches, contact your account manager or visit https://www.fs.com/search_result?keyword=IES3220

Document history

New or revised topic	Described in	Date
Updates to FS IES3220 Series Switches Data Sheet	Updated all	2/7/2024



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