

IES5100-24FS and IES5100-16TS Switches Data Sheet

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Contents

Product overview ---- 3

Product highlights ---- 3

Platform details ---- 4

Platform benefits ---- 9

Product specifications ---- 10

Quality certification ---- 12

Warranty, service and support ---- 12

Ordering information ---- 13

Additional information ---- 13

Document history ---- 13

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Product overview

IES5100 series supports rich Layer-2/Layer-3 routing and industrial ring network protocols. IES5100 series adopts die-casting aluminum shell and standard 19-inch rack-mounted installation, and provides redundant wide-voltage industrial power supplies (Only for IES5100-24FS Switch). With the reliable industrial Ethernet ring technology, its hardware-based algorithm can ensure node self-healing time less than 5 milliseconds, and the ring network self-healing time less than 50 milliseconds (typical value).

The IES5100-24FS features 24x 1G SFP ports, 4x 10G SFP+ ports, which is designed especially for industrial applications. Equipped with an IP40 rated metal enclosure, it can operate within a wide temperature range of -40 to 85° C (-40 to 185° F). This switch is ideal for harsh environments, and can be widely used in energy, transportation, industrial production, environmental protection, and military industry. This layer 3 industrial switch supports enhanced functions such as L3 static routing, RIP, OSPF, VRRP, DHCP Server, etc., which can meet the requirements of many scenarios in industrial environments.

The IES5100-16TS features 16x 10/100/1000BASE-T ports, 4x 1G SFP ports, 4x 10G SFP+ ports, which is designed especially for industrial applications. Equipped with an IP40 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 military industry. This layer 3 industrial switch supports enhanced functions such as L3 static routing, RIP, OSPF, VRRP, DHCP Server, etc., which can meet the requirements of many scenarios in industrial environments.

Product highlights

- Rack Mount for Installation (Only for IES5100-24FS Switch)
- DIN-rail Mounting for Efficient Use of Cabinet Space (Only for IES5100-16TS Switch)
- Robust IP40 Aluminum Metal Enclosure for Use in Industrial Environments
- Operate Stably Under the Temperature Range of -40 to 75° C
- Support L3 Static Routing, RIP, OSPF, VRRP, DHCP Server
- Support WEB/SSH/Telnet/SNMP for Easy Network Management

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Platform details

Switch models and configurations

Figures 1 through 2 show the FS IES5100-24FS and IES5100-16TS switches.

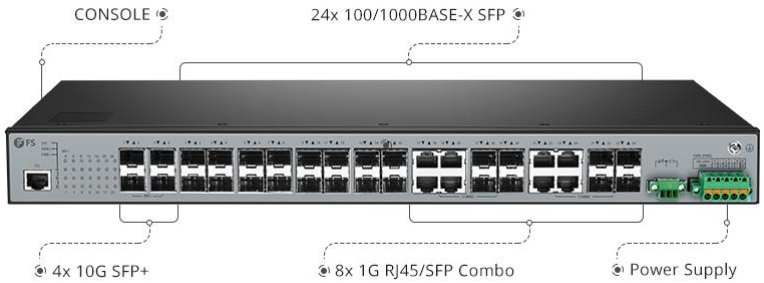

Figure 1.
IES5100-24FS, 24-Port Gigabit Ethernet L2+ Managed Industrial Switch, 24 x 1Gb SFP, with 8 x 1Gb Combo and 4 x 10Gb SFP+, -40 to 85° C Operating Temperature

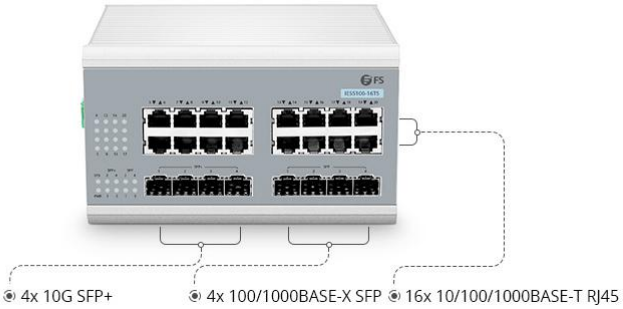

Figure 2.
IES5100-16TS, 16-Port Gigabit Ethernet L2+ Managed Industrial Switch, 16 x 10/100/1000BASE-T, with 4 x 1Gb SFP and 4 x 10Gb SFP+, -40 to 75° C Operating Temperature

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Switch configurations and port density

Table 1 shows the FS IES5100-24FS and IES5100-16TS configurations and port density.

Table 1. Switch configuration and port density

FS P/N	IES5100-24FS	IES5100-16TS
Description	IES5100-24FS, 24-Port Gigabit Ethernet L2+ Managed Industrial Switch, 24 x 1Gb SFP, with 8 x 1Gb Combo and 4 x 10Gb SFP+, -40 to 85° C Operating Temperature	IES5100-16TS, 16-Port Gigabit Ethernet L2+ Managed Industrial Switch, 16 x 10/100/1000BASE-T, with 4 x 1Gb SFP and 4 x 10Gb SFP+, -40 to 75° C Operating Temperature
Port		
1G port density	24	20
10G port density	4	4
10G port density with breakout cable	4	4
Console port	1	1
Memory and processor		
Switch chip	RTL9301	RTL9301
CPU	RTL9301	RTL9301
DRAM	W25Q128JVFIQ	W25Q128JVFIQ
SDRAM	MT41K128M16JT-125:K	MT41K128M16JT-125:K
Flash memory	16MB	16MB
Latency	/	1.859μs/1.931μs
Packet buffer	12Mb	12Mb

Note:

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

SFP ports can be used for 1G connection.

SFP+ ports can be used for 10G connection.

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Power supplies and fans

Table 2 provides more details on the FS IES5100-24FS and IES5100-16TS power supplies and fan specifications.

Table 2. Power supply and fan specifications

Description	IES5100-24FS	IES5100-16TS
Power supply	AC Power supply	AC/DC Power supply
Fan number	Fanless	Fanless
Max. power consumption	39W	26W
Power max rating	78W	31W
Input-voltage range and frequency	100-240VAC, 50-60Hz	48-60VDC, 100-240VAC, 50-60Hz
Power supply efficiency	≥82%	≥80%
Input current	2A	1.2A
Output holdup time	≥10ms	≥15ms
Power-supply input receptacles	5.08mm*5 Terminal socket terminal	5.08mm*3 Terminal socket terminal

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Stacking

The FS IES5100-24FS and IES5100-16TS switches models are designed for stacking switches as a single virtual switch, enabling customers to have a single management plane and control plane for up to 16 access ports.

Table 3 lists the supported stacking options.

Table 3. Supported stacking options

Part Name	IES5100-24FS	IES5100-16TS
Stacking ports	2	2
Supported stack members	Stack with other IES5100-24FS or IES5100-16TS with the same OS version	Stack with other IES5100-24FS or IES5100-16TS with the same OS version
Maximum number of VSL links	2	2
Number of members	2	2

Note:

All 10G ports can be stacked via transceivers or DAC/AOC cables, support port mixing but do not support speed reduction in the same VSL.

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Switch performance

Table 4 shows performance specifications for the FS IES5100-24FS and IES5100-16TS switches.

Table 4. Performance specifications

Description	IES5100-24FS	IES5100-16TS
Switching capacity	128 Gbps	120 Gbps
Forwarding rate	95 Mpps	89 Mpps
Total number of MAC addresses	16000	16000
Total number of IPv4 routes (indirect routes)	504	504
Total number of IPv4 host routes (direct routes and ARP)	2044	2044
Total number of IPv6 routes (indirect routes)	124	124
Total number of IPv6 host routes (direct routes and NDP)	1920	1920
Total number of IPv4 multicast routes	1024	1024
Total number of IPv6 multicast routes	1024	1024
QoS ACL scale	1150	1150
Security ACL scale	1150	1150
VLAN IDs	4000	4000
STP virtual ports (port* VLANs) for MST	28	28
Total switched virtual interfaces (SVIs)	63	63
Jumbo frame	9000	9000

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Platform benefits

Table 5 lists the software spotlights for the FS IES5100-24FS and IES5100-16TS switches.

Table 5. Software spotlights

Functionality	Description
High Availability And Multi-Service Support	Support the Spanning Tree Protocols (IEEE802.1d STP, IEEE802.1w RSTP, standard 802.1s MSTP) Support the IPv4 and IPv6 multicast functions Support traffic classification of each field of L2/L2+/L4 protocol headers Support IGMP v1/v2/v3, IGMP snooping, MLD
Error-Free Network Configuration	Support SNMP (Managed by Zabbix) v1, v2, and v3 Support STP protocol protection (BPDU Guard) Support LACP, ERPS, etc Support multiple queuing algorithms such as SP, WRR or SP+WRR Support 802.1P/DSCP priority remark
Secure And Simplified Access for Users And LoT	Support WEB GUI, Telnet, SSH Support IEEE802.1X RADIUS authentication Support IPv4/IPv6 ACL Support DHCP snooping Support IP source guard Support ARP inspection

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Product specifications

Table 6 shows the product specifications for the FS IES5100-24FS and IES5100-16TS switches.

Table 6. Product specifications

Description	IES5100-24FS	IES5100-16TS
Environmental		
Operating temperature	-40 to 85° C (-40 to 185° 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)
Operating humidity	10-85% (Non-condensing)	10-85% (Non-condensing)
Storage humidity	5-95% (Non-condensing)	5-95% (Non-condensing)
Temperature alarm	Not supported	Not supported
Acoustic noise	No	No
Physical specifications		
Dimensions (HxWxD)	17.32"x11.02"x1.73" (440x280x44mm)	6.69"x5.51"x3.94" (170x140x100mm)
Weight	6.83 lbs (3.1kg)	4.85 lbs (2.2kg)
Distance	100M	100M
Electrical		
Voltage (auto ranging)	100-240VAC	48-60VDC, 100-240VAC
Frequency	50-60Hz	50-60Hz
Current	2A	1.2A
Power rating (maximum consumption)	39W	26W
Mean-time between failures		
MTBF (hours)	>800000	>800000

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Description	IES5100-24FS	IES5100-16TS
Connectors		
Connectors and cabling	• SFP transceivers: LC fiber connectors (single-mode or multimode fiber) • SFP+ transceivers: LC fiber connectors (single-mode or multimode fiber) • Management console port: RJ-45-to-DB9 cable for PC connections	• 10/100/1000BASE-T ports: RJ-45 connectors, 4-pair Cat5e/Cat6 UTP cabling • SFP transceivers: LC fiber connectors (single-mode or multimode fiber) • SFP+ transceivers: LC fiber connectors (single-mode or multimode fiber) • 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 between 100 (115 for 1100WAC) and 240 VAC. Use the supplied AC power cord to connect the AC power connector to an AC power outlet	• 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 48-60 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	802.1s, 802.1w, 802.1x, 802.1d, 802.1p, 802.1q, SNMPV1 V2 V3, RMON	

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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.

Figures 3 shows some of the authoritative certifications obtained by FS IES5100-24FS and IES5100-16TS Switches.



Figure 3.

Warranty, service and support

FS IES5100-24FS and IES5100-16TS 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

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Ordering information

Table 7 provides the ordering information for IES5100-24FS and IES5100-16TS switches.

Table 7. Ordering information

FS P/N	Product description
Switch hardware	
IES5100-24FS	IES5100-24FS, 24-Port Gigabit Ethernet L2+ Managed Industrial Switch, 24 x 1Gb SFP, with 8 x 1Gb Combo and 4 x 10Gb SFP+, -40 to 85° C Operating Temperature
IES5100-16TS	IES5100-16TS, 16-Port Gigabit Ethernet L2+ Managed Industrial Switch, 16 x 10/100/1000BASE-T, with 4 x 1Gb SFP and 4 x 10Gb SFP+, -40 to 75° C Operating Temperature

Additional information

For more information about the IES5100-24FS and IES5100-16TS Switches, contact your account manager or visit https://www.fs.com/products/161349.html / https://www.fs.com/products/161350.html

Document history

New or revised topic	Described in	Date
Updates to FS IES5100-24FS and IES5100-16TS Switches Data Sheet	Updated all	11/9/2022

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