FS Industrial IES5100, IES3110 and IES3100 Series Switches Data Sheet

Contents

Product overview

FS IES5100/IES3110/IES3100 series switches are industrial switches with environmentally hardened design, and can operate stably under the temperature range from -40 to 85 degrees C(IES5100)/-40 to 75 degrees C(IES3110/IES3100). They are ideal for harsh environments, such as traffic control cabinets, factory floors, and the outdoor places where temperature is extremely low or high.

The IES5100-24TF features 24x 10/100/1000BASE-T copper ports, 4x 100/1000BASE-X SFP ports in a 1U case, 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, 802.1Q VLAN and port-based VLAN, QoS, IGMP snooping, LACP link aggregation, etc. can meet the requirements of many scenarios in industrial environments.

The IES3110-8TF features 8x 10/100/1000BASE-T copper ports, 2x 100/1000BASE-X SFP ports, which is designed especially for industrial application. Equipped with an IP30 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, such as traffic control cabinets, factory floors, and the outdoor places where temperature is extremely low or high. This layer 2 industrial switch supports enhanced L2+ functions such as 802.1Q VLAN and port-based VLAN, QoS, IGMP Snooping, LACP link aggregation, Static Routing, etc., can meet the requirements of many scenarios in SMBs.

The IES3110-8TFP-R features 8x 10/100/1000BASE-T PoE+ ports with a 240W PoE budget, 2x 100/1000BASE-X SFP ports, which are designed for industrial applications. Equipped with an IP40-rated metal enclosure, it can operate within a wide temperature range of -40 to 75° C. This switch is ideal for harsh environments, such as traffic control cabinets, factory floors, and outdoor places where the temperature is extremely low or high. All Gigabit PoE+ ports support a power budget of up to 240W 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 switch supports enhanced L2+ functions such as 802.1Q VLAN and port-based VLAN, QoS, IGMP Snooping, LACP link aggregation, Static Routing, etc., and can meet the requirements of many scenarios in SMBs.

The IES3110-8TF-R features 8x 10/100/1000BASE-T copper ports, 2x 100/1000BASE-X SFP ports, which is designed especially for industrial application. 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, such as traffic control cabinets, factory floors, and the outdoor places where temperature is extremely low or high. This layer 2 industrial switch supports enhanced L2+ functions such as 802.1Q VLAN and port-based VLAN, QoS, IGMP Snooping, LACP link aggregation, Static Routing, etc., can meet the requirements of many scenarios in SMBs.

The IES3110-16TF features 16x 10/100/1000BASE-T copper ports, 2x 100/1000BASE-X SFP ports, which is designed especially for industrial application. Equipped with an IP30 rated metal enclosure, it can operate within a wide temperature range of -40° – 75° C (-40 – 167° F). This switch is ideal for harsh environments, such as traffic control cabinets, factory floors, and the outdoor places where temperature is extremely low or high.This industrial switch supports enhanced L2 functions such as 802.1Q VLAN and port-based VLAN, QoS, IGMP Snooping, LACP link aggregation, Static Routing, etc., and can meet the requirements of many scenarios in SMBs.

Product overview

The IES3110-8TF-P features 8x 10/100/1000BASE-T PoE+ ports with a 240W PoE budget, 2x 100/1000/2500BASE-X SFP ports, which is designed especially for industrial application. Equipped with an IP30 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, such as traffic control cabinets, factory floors, and the outdoor places where temperature is extremely low or high.All Gigabit PoE+ ports support power budget of up to 240W 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 switch supports enhanced L2+ functions such as 802.1Q VLAN and port-based VLAN, QoS, IGMP Snooping, LACP link aggregation, Static Routing, etc., can meet the requirements of many scenarios in SMBs.

The IES3110-24TF features 24x 10/100/1000BASE-T copper ports, 4x RJ45/SFP combo in a 1U case, which is designed especially for industrial applications. Equipped with an IP30 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, military industry.This layer 2 industrial switch supports enhanced L2+ functions such as 802.1Q VLAN and port-based VLAN, QoS, IGMP Snooping, LACP link aggregation, Static Routing, etc., can meet the requirements of many scenarios in industrial environments.

The IES3100-8TF-P features 8x 10/100/1000BASE-T PoE+ ports and 2x 100/1000/2500BASE-X SFP ports, which is designed for industrial application. Equipped with an IP30-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, such as traffic control cabinets, factory floors, and outdoor places where the temperature is extremely low or high. All Gigabit PoE+ ports support a power budget of up to 240W 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 switch supports enhanced L2+ functions such as 802.1Q VLAN and port-based VLAN, QoS, IGMP snooping, LACP link aggregation, static routing, etc. can meet the requirements of many scenarios in SMBs.

The IES3100-8TF features 8x 10/100/1000BASE-T copper ports, 2x 100/1000/2500BASE-X SFP ports, which is designed especially for industrial application. 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, such as traffic control cabinets, factory floors, and the outdoor places where temperature is extremely low or high.This layer 2 industrial switch supports enhanced L2+ functions such as 802.1Q VLAN and port-based VLAN, QoS, IGMP Snooping, LACP link aggregation, Static Routing, etc., can meet the requirements of many scenarios in SMBs.

Product highlights

- DIN-rail Mounting for Efficient Use of Cabinet Space（Only for IES3110-8TF / IES3110-16TF / IES3100-8TF-P / IES3100-8TF Switches）
- Rack Mount for Installation（Only for IES5100-24TF / IES3110-24TF Switches）
- Flexible Mounting Options of DIN-rail and Wall Mounting（Only for IES3110-8TFP-R / IES3110-8TF-R / IES3110-8TF-P Switches）
- Robust IP30 Aluminum Metal Enclosure for Use in Industrial Environments（Only for IES5100-24TF / IES3110-8TF / IES3110-16TF / IES3110-8TF-P / IES3110-24TF / IES3100-8TF-P Switches）
- Robust IP40 Aluminum Metal Enclosure for Use in Industrial Environments（Only for IES3110-8TFP-R / IES3110-8TF-R / IES3100-8TF Switches）
- Operate Stably Under the Temperature Range of -40 – 75° C（Only for IES3110-8TF / IES3110-8TFP-R / IES3110-16TF / IES3110-8TF-P / IES3110-24TF / IES3100-8TF-P / IES3100-8TF Switches）
- Operate Stably Under the Temperature Range of -40 – 85° C（Only for IES5100-24TF / IES3110-8TF-R Switches）
- Hardened for Vibration, Shock and Surge, and Noise Immunity
- Support ERPS, IEEE 1588v2 PTP, SSH, TLS, DHCP Snooping, ACL, etc.（Only for IES3110-8TF / IES3110-8TF-P Switches）
- Support ERPS, L3 Static Routing, RIP, OSPF, VRRP（Only for IES5100-24TF Switch）
- Support ERPS, IEEE 1588v2 PTP, QoS, VLANs, etc.（Only for IES3110-8TFP-R / IES3110-8TF-R / IES3110-24TF Switches）
- Support Port-based VLAN, IEEE 802.1Q VLAN, and GVRP to Ease Network Planning（Only for IES3100-8TF / IES3100-8TF-P Switches）
- Support WEB/CLI/SSH/Telnet/SNMP for Easy Network Management
- Compliant with PoE+, 240W PoE Power Budget（Only for IES3110-8TF-P / IES3110-8TFP-R / IES3100-8TF-P Switches）
- Support 6KV Lightning Protection, ESD 15KV（Only for IES3110-8TFP-R / IES3110-8TF-R Switches）
- Dual Redundant Power Inputs Design for DC Models（Only for IES3110-8TFP-R / IES3110-8TF-R Switches）

Platform details

Switch models and configurations

Figures 1 through 9 show the FS IES5100 / IES3110 / IES3100 series switches.

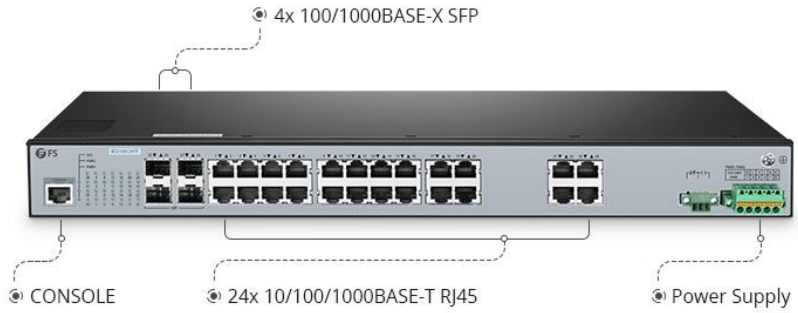

Figure 1.
IES5100-24TF, 24-Port Gigabit Ethernet L3 Managed Industrial Switch, 24 x 10/100/1000BASE-T, with 4 x 1Gb SFP, -40 to 85° C Operating Temperature

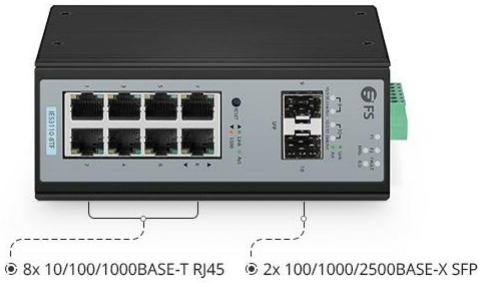

Figure 2.
IES3110-8TF, 8-Port Gigabit Ethernet L2+ Managed Industrial Switch, 8 x 10/100/1000BASE-T, with 2 x 1Gb SFP, -40 to 75° C Operating Temperature

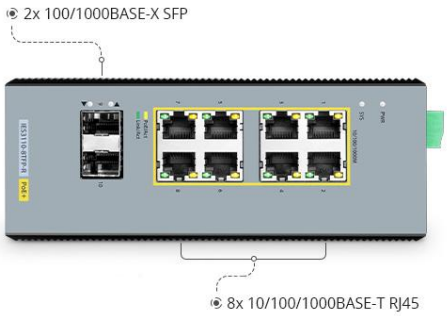

Figure 3.
IES3110-8TFP-R, 8-Port Gigabit Ethernet L2+ Managed Industrial PoE+ Switch, 8 x PoE+ Ports @240W, with 2 x 1Gb SFP, -40 to 75° C Operating Temperature

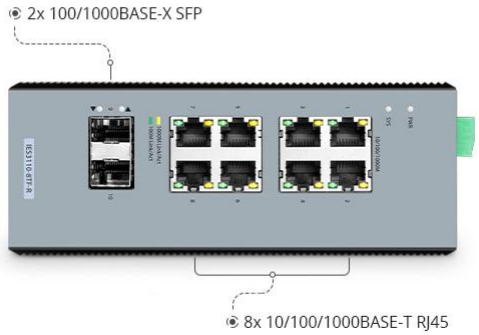

Figure 4.

IES3110-8TF-R, 8-Port Gigabit Ethernet L2+ Managed Industrial Switch, 8 x 10/100/1000BASE-T, with 2 x 1Gb SFP, -40 to 85° C Operating Temperature

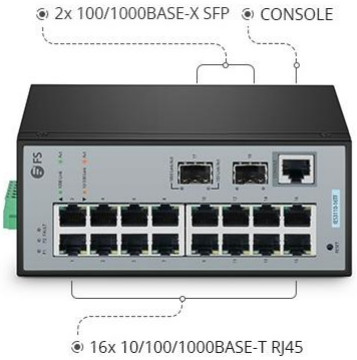

Figure 5.

IES3110-16TF, 16-Port Gigabit Ethernet L2 Managed Industrial Switch, 16 x 10/100/1000BASE-T, with 2 x 1Gb SFP, -40 to 75° C Operating Temperature

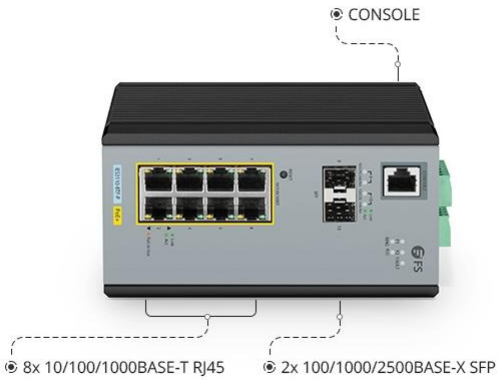

Figure 6.

IES3110-8TF-P, 8-Port Gigabit Ethernet L2+ Managed Industrial PoE+ Switch, 8 x PoE+ Ports @240W, with 2 x 1/2.5Gb SFP, -40 to 75° C Operating Temperature

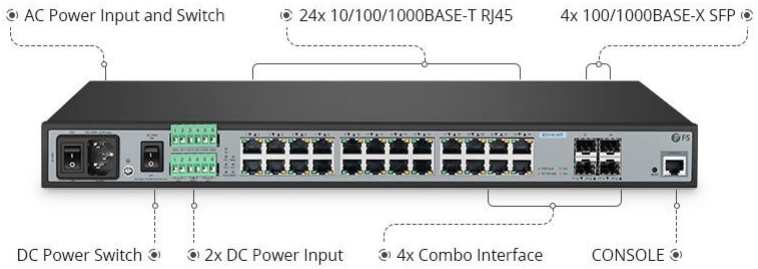

Figure 7.

IES3110-24TF, 24-Port Gigabit Ethernet L2+ Managed Industrial Switch, 24 x 10/100/1000BASE-T, with 4 x 1Gb Combo, -40 to 75°C Operating Temperature

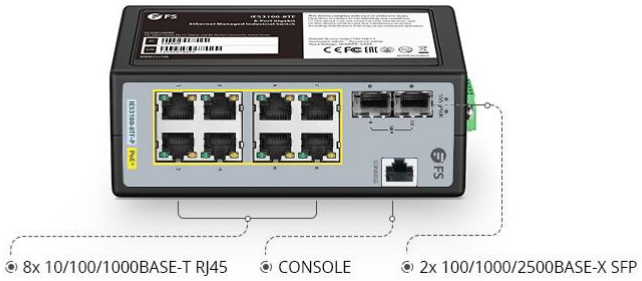

Figure 8.

IES3100-8TF-P, 8-Port Gigabit Ethernet L2+ Managed Industrial PoE+ Switch, 8 x PoE+ Ports @240W, with 2 x 1/2.5Gb SFP, -40 to 75°C Operating Temperature

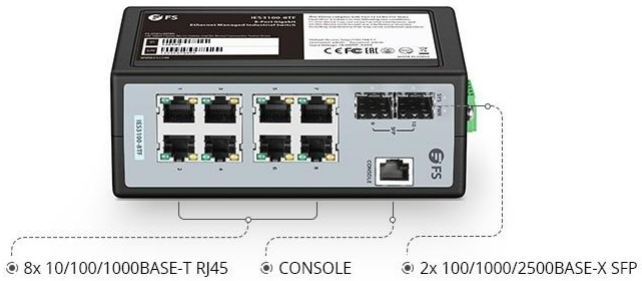

Figure 9.

IES3100-8TF, 8-Port Gigabit Ethernet L2+ Managed Industrial Switch, 8 x 10/100/1000BASE-T, with 2 x 1/2.5Gb SFP, -40 to 75°C Operating Temperature

Switch configurations and port density

Table 1 shows the FS IES5100&IES3110 series (24 Ports / 16 Ports) configurations and port density.

Table 1. Switch configuration and port density

FS P/N	IES5100-24TF	IES3110-24TF	IES3110-16TF
Description	IES5100-24TF, 24-Port Gigabit Ethernet L3 Managed Industrial Switch, 24 x 10/100/1000BASE-T, with 4 x 1Gb SFP, -40 to 85° C Operating Temperature	IES3110-24TF, 24-Port Gigabit Ethernet L2+ Managed Industrial Switch, 24 x 10/100/1000BASE-T, with 4 x 1Gb Combo, -40 to 75° C Operating Temperature	IES3110-16TF, 16-Port Gigabit Ethernet L2 Managed Industrial Switch, 16 x 10/100/1000BASE-T, with 2 x 1Gb SFP, -40 to 75° C Operating Temperature
Port			
1G port density	28	28	18
Console port	1	1	1
Memory and processor			
Switch chip	RTL9301	VITESSE VSC7429	Realtek RTL8382MI
CPU	RTL9301	MIPS 416MHz (integrated with VSC7429)	Realtek RTL8218B/I
DRAM	256MB	16MB	16MB
SDRAM	-	128MB	128MB
Flash memory	16MB	16MB	16MB
Latency	-	1.96uSec/2.92uSec	< 4.29uSec
Packet buffer	12Mbit	4MB	4MB

Note:

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

Switch configurations and port density

Table 2 shows the FS IES3110&IES3100 series (8 Ports PoE) configurations and port density.

Table 2. Switch configuration and port density

FS P/N	IES3100-8TF-P	IES3110-8TFP-R	IES3110-8TF-P
Description	IES3100-8TF-P, 8-Port Gigabit Ethernet L2+ Managed Industrial PoE+ Switch, 8 x PoE+ Ports @240W, with 2 x 1/2.5Gb SFP, -40 to 75° C Operating Temperature	IES3110-8TFP-R, 8-Port Gigabit Ethernet L2+ Managed Industrial PoE+ Switch, 8 x PoE+ Ports @240W, with 2 x 1Gb SFP, -40 to 75° C Operating Temperature	IES3110-8TF-P, 8-Port Gigabit Ethernet L2+ Managed Industrial PoE+ Switch, 8 x PoE+ Ports @240W, with 2 x 1/2.5Gb SFP, -40 to 75° C Operating Temperature
Port			
1G port density	8	10	8
2.5G port density	2	0	2
Console port	1	1	1
Memory and processor			
Switch chip	VSC7428	VSC7424	VITESSE VSC7428
CPU	VSC7428	-	MIPS 416MHz (integrated with VSC7428)
DRAM	/	16MB	16MB
SDRAM	1Gbit	128MB	128MB
Flash memory	256Mbit	16MB	16MB (NOR)
Latency	2.92us	-	1.81uSec/3.9uSec
Packet buffer	4Mbit	4MB	4MB

Note:

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

SFP ports can be used for 100/1000M/2.5G connection.

Switch configurations and port density

Table 3 shows the FS IES3110&IES3100 series (8 Ports Without PoE) configurations and port density.

Table 3. Switch configuration and port density

FS P/N	IES3110-8TF	IES3100-8TF	IES3110-8TF-R
Description	IES3110-8TF, 8-Port Gigabit Ethernet L2+ Managed Industrial Switch, 8 x 10/100/1000BASE-T, with 2 x 1Gb SFP, -40 to 75° C Operating Temperature	IES3100-8TF, 8-Port Gigabit Ethernet L2+ Managed Industrial Switch, 8 x 10/100/1000BASE-T, with 2 x 1/2.5Gb SFP, -40 to 75° C Operating Temperature	IES3110-8TF-R, 8-Port Gigabit Ethernet L2+ Managed Industrial Switch, 8 x 10/100/1000BASE-T, with 2 x 1Gb SFP, -40 to 85° C Operating Temperature
Port			
1G port density	8	8	10
2.5G port density	0	2	0
Console port	0	1	1
Memory and processor			
Switch chip	VITESSE VSC7428	VSC7428	VSC7424
CPU	MIPS 416MHz (integrated with VSC7428)	VSC7428	-
DRAM	16MB	MX25L25635FMI-10G	16MB
SDRAM	128MB	MT47H128M8SH-25E:M	128MB
Flash memory	16MB (NOR)	256MB (NOR)	16MB (NOR)
Latency	1.92uSec/3.2uSec	1.98uSec/2.936uSec	-
Packet buffer	4MB	4MB	4MB

Note:

RJ45 ports can be used as 10/100/1000M ports for Ethernet connection.
SFP ports can be used for 100/1000M/2.5G connection.

Power supplies and fans

Table 4 provides more details on the FS IES5100&IES3110 series (24 Ports / 16 Ports) power supplies and fan specifications.

Table 4. Power supply and fan specifications

Description	IES5100-24TF	IES3110-24TF	IES3110-16TF
Power supply	Dual 1+1 redundant power supplies (AC/DC)	Dual 1+1 redundant power supplies (AC+DC)	Dual 1+1 redundant power supplies (AC+DC)
Fan number	0	0	0
Acoustic noise	No	No	No
Maximum fan speed	-	-	-
Max. power consumption	78W	20W	12.5W (DC Input), 15W (AC Input)
Input-voltage range	100-240VAC/VDC	36-60VDC, 100-240VAC	12-48VDC, 24VAC
Power supply efficiency	≥82%	-	-
Input current	2A	AC 0.5A (MAX) / DC 0.7A (MAX)	AC 1A (MAX) / DC 1.5A (MAX)
Output ratings	Main output：12V 6.5A	-	-
Output holdup time	10ms	-	-
Power-supply input receptacles	5 pin AC/DC terminal block	3 Pin AC power cord 6 Pin DC terminal block	6 Pin terminal block
Power cord rating	10A	10A	-

Power supplies and fans

Table 5 provides more details on the FS IES3110&IES3100 series (8 Ports PoE) power supplies and fan specifications.

Table 5. Power supply and fan specifications

Description	IES3100-8TF-P	IES3110-8TFP-R	IES3110-8TF-P
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	0	0	0
Acoustic noise	No	No	No
Maximum fan speed	-	-	-
Max. power consumption	10W	234W (Full PoE Loading)	255W (Full PoE Loading)
Input-voltage range	48-57VDC	48-55VDC	48-56VDC
Power supply efficiency	≥75%	-	-
Input current	5.2A (MAX)	Based on adapter	4.3A (MAX)
Output ratings	Main output：12V 1A	Based on adapter	240W
Output holdup time	10ms	Based on adapter	Full time supply to PD
Power-supply input receptacles	5.08mm*5 terminal socket terminal	Industrial terminals	6 Pin terminal block
PoE standard	IEEE 802.3af/at	IEEE 802.3af/at	IEEE 802.3af/at
PoE power budget	240W	240W	240W

Power supplies and fans

Table 6 provides more details on the FS IES3110&IES3100 series (8 Ports Without PoE) power supplies and fan specifications.

Table 6. Power supply and fan specifications

Description	IES3110-8TF	IES3100-8TF	IES3110-8TF-R
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	0	0	0
Acoustic noise	No	No	No
Maximum fan speed	-	-	-
Max. power consumption	10W	10W	10W
Input-voltage range	12-48VDC, 24VAC	18-60VDC	12-55VDC
Power supply efficiency	-	≥75%	-
Input current	AC 0.7A (MAX) / DC 1.25A (MAX)	0.2A (MAX)	Based on adapter
Output ratings	-	Main output：12V 1A	Based on adapter
Output holdup time	-	10ms	Based on adapter
Power-supply input receptacles	6 Pin terminal block	5.08mm*5 terminal socket terminal	Industrial terminals

Switch performance

Table 7 shows performance specifications for the FS IES5100&IES3110 series (24 Ports / 16 Ports) switches.

Table 7. Performance specifications

Performance for all IES5100/IES3110/IES3100 Series Switches	IES5100-24TF	IES3110-24TF	IES3110-16TF
Switching capacity	56 Gbps	48 Gbps	36 Gbps
Forwarding rate	41 Mpps	35.71 Mpps	26.79 Mpps
Total number of MAC addresses	16000	8000	8000
Total number of IPv4 routes (indirect routes)	504	32	32
Total number of IPv4 host routes (direct routes and ARP)	2000	32	32
Total number of IPv6 routes (indirect routes)	132	32	32
Total number of IPv6 host routes (direct routes and NDP)	1000	32	32
Total number of IPv4 multicast routes	1000	-	-
Total number of IPv6 multicast routes	1000	-	-
QoS ACL scale	1200	256	123
Security ACL scale	1200	256	123
VLAN IDs	4000	4000	4000
STP virtual ports (port* VLANs) for MST	23	7	15
Total switched virtual interfaces (SVIs)	63	4000	4000
Jumbo frame	9000 Bytes	9000 Bytes	10000 Bytes

Switch performance

Table 8 shows performance specifications for the FS IES3110&IES3100 series (8 Ports PoE) switches.

Table 8. Performance specifications

Performance for all IES5100/IES3110/IES3100 Series Switches	IES3100-8TF-P	IES3110-8TFP-R	IES3110-8TF-P
Switching capacity	28 Gbps	20 Gbps	26 Gbps
Forwarding rate	148, 800 pps/100M ports; 1, 488, 000 pps/1000M port	12 Mpps	14.8 Mpps
Total number of MAC addresses	8000	8000	8000
Total number of IPv4 routes (indirect routes)	-	-	32
Total number of IPv4 host routes (direct routes and ARP)	-	4000	32
Total number of IPv6 routes (indirect routes)	-	-	32
Total number of IPv6 host routes (direct routes and NDP)	-	4000	32
QoS ACL scale	110	-	123
Security ACL scale	110	16	123
VLAN IDs	4000	4000	4000
STP virtual ports (port* VLANs) for MST	10	7	7
Total switched virtual interfaces (SVIs)	10	-	4000
Jumbo frame	9000 Bytes	9000 Bytes	9000 Bytes

Switch performance

Table 9 shows performance specifications for the FS IES3110&IES3100 series (8 Ports Without PoE) switches.

Table 9. Performance specifications

Performance for all IES5100/IES3110/IES3100 Series Switches	IES3110-8TF	IES3100-8TF	IES3110-8TF-R
Switching capacity	26 Gbps	28 Gbps	26 Gbps
Forwarding rate	14.8 Mpps	12 Mpps	14.8 Mpps
Total number of MAC addresses	8000	8000	8000
Total number of IPv4 routes (indirect routes)	32	-	-
Total number of IPv4 host routes (direct routes and ARP)	32	-	4000
Total number of IPv6 routes (indirect routes)	32	-	-
Total number of IPv6 host routes (direct routes and NDP)	32	-	4000
QoS ACL scale	123	110	-
Security ACL scale	123	110	16
VLAN IDs	4000	4000	4000
STP virtual ports (port* VLANs) for MST	7	10	7
Total switched virtual interfaces (SVIs)	4000	10	-
Jumbo frame	9000 Bytes	9000 Bytes	9000 Bytes

Platform benefits

Table 10 lists the software spotlights for the FS IES5100&IES3110 series (24 Ports / 16 Ports) switches.

Table 10. Software spotlights

Functionality	Description
Sound Security Protection Policies	Support IPv4/IPv6 ACL Support ARP inspection Support IP source guard Support IEEE802.1X RADIUS authentication Support DHCP snooping
QoS (IES5100-24TF)	Support traffic classification of each field of L2/L3/L4 protocol headers Support CAR traffic control Support 802.1P/DSCP priority remark Support multiple queuing algorithms such as SP, WRR or SP+WRR Support tail-Drop, WRE Support traffic supervision and traffic shaping
QoS (IES3110-24TF / IES3110-16TF)	8 priority queues on all switch Support Ingress Shaper and Egress Rate Limit per port bandwidth control Support 802.1P/DSCP priority remark Support multiple queuing algorithms such as WRR Support QoS and In/Out bandwidth（Only for IES3110-24TF Switch） Support traffic-policing on the switch port（Only for IES3110-24TF Switch） Support DSCP remarking
Easy Network Maintenance	Support CLI-based, using console ports Support WEB GUI, Telnet, SSH, using 10/100/1000Mbps management port or service ports Support SNMP (Managed by Zabbix) v1, v2, and v3
High Reliability	Support LACP, ERPS, etc. Support LACP（Only for IES3110-16TF Switch） Support the Spanning Tree Protocols (IEEE802.1d STP, IEEE802.1w RSTP, standard 802.1s MSTP) Support STP Protocol Protection (BPDU Guard)
Strong Multi-Service Support Capability	Support the IPv4 and IPv6 multicast functions Support IGMP v1/v2/v3, IGMP snooping, MLD
Industrial Case and Installation (IES5100-24TF)	Support IP40 aluminum industrial case protection -40 to 85° C operating temperature Support 6KV lightning protection AC/DC 220V wide-voltage industrial power input
Industrial Case and Installation (IES3110-24TF / IES3110-16TF)	Support IP30 aluminum industrial case protection -40 to 75° C operating temperature DIN-rail or wall mounting design（Only for IES3110-16TF Switch） Support ESD 6KV DC Ethernet protection

Platform benefits

Table 11 lists the software spotlights for the FS IES3110&IES3100 series (8 Ports PoE) switches.

Table 11. Software spotlights

Functionality	Description
Sound Security Protection Policies	Support IPv4/IPv6 ACL Support ARP inspection Support IP source guard Support IEEE802.1X RADIUS authentication Support DHCP snooping
QoS	8 priority queues on all switch Support Ingress Shaper and Egress Rate Limit per port bandwidth control Support 802.1P/DSCP priority remark Support multiple queuing algorithms such as WRR Support QoS and In/Out bandwidth Support traffic-policing on the switch port Support DSCP remarking Support traffic classification of each field of L2/L3/L4 protocol headers（Only for IES3100-8TF-P Switch） Support CAR traffic control（Only for IES3100-8TF-P Switch） Support multiple queuing algorithms such as SP, WRR or SP+WRR（Only for IES3100-8TF-P Switch） Support Tail-Drop, WRE（Only for IES3100-8TF-P Switch）
Easy Network Maintenance	Support CLI-based, using console ports Support WEB GUI, Telnet, SSH, using 10/100/1000Mbps management port or service ports Support SNMP (Managed by Zabbix) v1, v2, and v3
High Reliability	Support LACP, ERPS, etc. Support LACP, ERPS, G.8032, etc.（Only for IES3100-8TF-P Switch） Support the Spanning Tree Protocols (IEEE802.1d STP, IEEE802.1w RSTP, standard 802.1s MSTP) Support STP Protocol Protection (BPDU Guard)
Strong Multi-Service Support Capability	Support the IPv4 and IPv6 multicast functions Support IGMP v1/v2/v3, IGMP Snooping, MLD
Industrial Case and Installation	Support IP40 aluminum industrial case protection（Only for IES3110-8TFP-R Switch） Support IP30 aluminum industrial case protection（Only for IES3100-8TF-P / IES3110-8TF-P Switches） -40 to 75° C operating temperature DIN-rail or wall mounting design（Only for IES3110-8TFP-R / IES3110-8TF-P Switches） DIN-rail mounting design（Only for IES3100-8TF-P Switch） Dual redundant power inputs design for DC models

Platform benefits

Table 12 lists the software spotlights for the FS IES3110&IES3100 series (8 Ports Without PoE) switches.

Table 12. Software spotlights

Functionality	Description
Sound Security Protection Policies	Support IPv4/IPv6 ACL Support ARP inspection Support IP source guard Support IEEE802.1X RADIUS authentication Support DHCP Snooping
QoS	8 priority queues on all switch Support Ingress Shaper and Egress Rate Limit per port bandwidth control Support 802.1P/DSCP priority remark Support multiple queuing algorithms such as WRR Support QoS and In/Out bandwidth Support traffic-policing on the switch port Support DSCP remarking Support traffic classification of each field of L2/L3/L4 protocol headers（Only for IES3100-8TF Switch） Support CAR traffic control（Only for IES3100-8TF Switch） Support multiple queuing algorithms such as SP, WRR or SP+WRR（Only for IES3100-8TF Switch） Support Tail-Drop, WRE（Only for IES3100-8TF Switch）
Easy Network Maintenance	Support CLI-based, using console ports Support WEB GUI, Telnet, SSH, using 10/100/1000Mbps management port or service ports Support SNMP (Managed by Zabbix) v1, v2, and v3
High Reliability	Support LACP, ERPS, etc.（Only for IES3110-8TF、IES3110-8TF-R Switch） Support the Spanning Tree Protocols (IEEE802.1d STP, IEEE802.1w RSTP, standard 802.1s MSTP)（Only for IES3110-8TF / IES3110-8TF-R Switches） Support STP Protocol Protection (BPDU Guard)（Only for IES3110-8TF / IES3110-8TF-R Switches） Support ARP inspection（Only for IES3100-8TF Switch） Support IP source guard（Only for IES3100-8TF Switch） Support IEEE802.1X RADIUS authentication, TACAS+（Only for IES3100-8TF Switch） Support DHCP Server Relay/Snooping（Only for IES3100-8TF Switch） Support Control Plane Protect (CoPP) black & white list and rate limit features（Only for IES3100-8TF Switch）
Strong Multi-Service Support Capability	Support the IPv4 and IPv6 multicast functions Support IGMP v1/v2/v3, IGMP Snooping, MLD
Industrial Case and Installation	Support IP40 aluminum industrial case protection（Only for IES3100-8TF / IES3110-8TF-R Switches） Support IP30 aluminum industrial case protection（Only for IES3110-8TF Switch） -40 to 75° C operating temperature（Only for IES3110-8TF / IES3100-8TF Switches） -40 to 85° C operating temperature（Only for IES3110-8TF-R Switch） DIN-rail or wall mounting design（Only for IES3110-8TF / IES3110-8TF-R Switches） DIN-rail mounting design（Only for IES3100-8TF Switch） Dual redundant power inputs design for DC models

Product specifications

Table 13 shows the product specifications for the FS IES5100&IES3110 series (24 Ports / 16 Ports) switches.

Table 13. Product specifications

Description	IES5100-24TF	IES3110-24TF	IES3110-16TF
Environmental			
Operating temperature	-40 to 85° C (-40 to 185° F)	-40 to 75° C (-40 to 167° F) for DC, -10 to 60° C (14 to 140° F) for AC	-40 to 75° C (-40 to 167° F)
Storage temperature	-40 to 85° C (-40 to 185° F)	-40 to 80° C (-40 to 176° 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)
Temperature alarm	Supported	Not Supported	Not Supported
Acoustic noise	No	No	No
Physical specifications			
Dimensions (HxWxD)	1.73"x17.32"x11.02" (44x440x280mm)	1.75"x17.32"x7.87" (44.5x440x200mm)	5.98"x2.59"x4.21" (152x66x107mm)
Weight	5.51 lbs (2.5kg)	6.17 lbs (2.8kg)	1.76 lbs (0.8kg)
Distance	100M	100M	100M
Electrical			
Voltage (auto ranging)	100-240VAC/VDC	36-60VDC, 100-240VAC	12-48VDC, 24VAC
Frequency	50/60Hz	-	-
Current	2A	1A at 24V DC	1A at 24V DC
Power rating (maximum consumption)	78W	20W	12.5W (DC Input), 15W (AC Input)
Mean-time between failures			
MTBF (hours)	≥400000	＞100,000	＞100,000

Description	IES5100-24TF	IES3110-24TF	IES3110-16TF
Connectors			
Connectors and cabling	• 1GBASE-T ports: RJ-45 connectors, 4-pair Cat5E/Cat6 UTP cabling • 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 of 100-240 VAC. Connect the AC power connector to the AC power outlet using an AC power cord that conforms to 100-240V	• 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 100-240 VAC or 36-60VDC. Use the supplied AC/DC power cord to connect the AC/DC power connector to an AC/DC 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 24 VAC or 12-48 VDC. Use the supplied AC/DC power cord to connect the AC/DC power connector to an AC/DC power outlet
Standards			
Standards	802.1s, 802.1w, 802.1x, 802.1d, 802.1p, 802.1q, RMON, SNMPV1 V2 V3	FCC Part 15 Class A, CE IEEE 802.3 10BASE-T IEEE 802.3u 100BASE-TX/100BASE-FX IEEE 802.3z Gigabit SX/LX IEEE 802.3ab Gigabit 1000T IEEE 802.3x flow control and back pressure IEEE 802.3ad port trunk with LACP IEEE 802.1D Spanning Tree Protocol IEEE 802.1w Rapid Spanning Tree Protocol IEEE 802.1s Multiple Spanning Tree Protocol IEEE 802.1p Class of Service IEEE 802.1Q VLAN tagging IEEE 802.1x Port Authentication Network Control IEEE 802.1ab LLDP IEEE 1588v2 RFC 768 UDP RFC 783 TFTP RFC 793 TCP RFC 791 IP RFC 792 ICMP RFC 2068 HTTP RFC 1112 IGMP version 1 RFC 2236 IGMP version 2 RFC 3376 IGMP version 3 RFC 2710 MLD version 1 RFC 3810 MLD version 2 ITU G.8032 ERPS Ring	FCC Part 15 Class A, CE IEC 60068-2-32 (free fall) IEC 60068-2-27 (shock) IEC 60068-2-6 (vibration) IEEE 802.3 10BASE-T IEEE 802.3u 100BASE-TX/100BASE-FX IEEE 802.3z Gigabit SX/LX IEEE 802.3ab Gigabit 1000T IEEE 802.3x flow control and back pressure IEEE 802.3ad port trunk with LACP IEEE 802.1D Spanning Tree Protocol IEEE 802.1w Rapid Spanning Tree Protocol IEEE 802.1s Multiple Spanning Tree Protocol IEEE 802.1p Class of Service IEEE 802.1Q VLAN tagging IEEE 802.1x Port Authentication Network Control IEEE 802.1ab LLDP IEEE 802.3az for Energy-Efficient Ethernet RFC 768 UDP RFC 783 TFTP RFC 791 IP RFC 792 ICMP RFC 2068 HTTP RFC 1112 IGMP v1 RFC 2236 IGMP v2 RFC 3376 IGMP v3 RFC 2710 MLD v1 FRC 3810 MLD v2 ITU G.8032 ERPS Ring

Product specifications

Table 14 shows the product specifications for the FS IES3110&IES3100 series (8 Ports PoE) switches.

Table 14. Product specifications

Description	IES3100-8TF-P	IES3110-8TFP-R	IES3110-8TF-P
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 75° C (-40 to 167° 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)
Temperature alarm	Supported	Not supported	Not supported
Acoustic noise	No	No	No
Physical specifications			
Dimensions (HxWxD)	5.51"x2.04"x4.33" (140x52x110mm)	6.50'x5.12"x2.56" (165×130×65mm)	5.98"x2.83"x4.21" (152x72x107mm)
Weight	1.54 lbs (0.7kg)	1.98 lbs (0.9kg)	2.2 lbs (1.0kg)
Distance	100M	100M	100M
Electrical			
Voltage (auto ranging)	48-57VDC	48-55VDC	48-56VDC
Current	5.2A (MAX)	-	1A at 24V DC
Power rating (maximum consumption)	10W	234W (Full PoE Loading)	255W (Full PoE Loading)
Mean-time between failures			
MTBF (hours)	≥400000	＞100000	＞100000

Description	IES3100-8TF-P	IES3110-8TFP-R	IES3110-8TF-P
Connectors			
Connectors and cabling	• 1GBASE-T ports: RJ-45 connectors, 4-pair Cat5E/Cat6 UTP cabling • 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 of 48-57 VDC. Use the supplied DC power cord to connect the DC power connector to an DC 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 48-55 VDC. Use the supplied DC power cord to connect the DC power connector to an DC 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 48-56 VDC. Use the supplied DC power cord to connect the DC power connector to an DC power outlet

Description	IES3100-8TF-P	IES3110-8TFP-R	IES3110-8TF-P
Standards			
Standards	802.1s, 802.1w, 802.1x, 802.1d, 802.1p, 802.1q, RMON, SNMPV1 V2 V3	EMI: FCC Part 15, CISPR (EN55032) class A	FCC Part 15 Class A, CE IEC60068-2-32 (free fall) IEC60068-2-27 (shock) IEC60068-2-6 (vibration) IEEE 802.3 10BASE-T IEEE 802.3u 100BASE-TX/100BASE-FX IEEE 802.3ab Gigabit 1000T IEEE 802.3z Gigabit SX/LX IEEE 802.3bz 2.5GBASE-X IEEE 802.3x flow control and back pressure IEEE 802.3ad port trunk with LACP IEEE 802.1D Spanning Tree Protocol IEEE 802.1w Rapid Spanning Tree Protocol IEEE 802.1s Multiple Spanning Tree Protocol IEEE 802.1p Class of Service IEEE 802.1Q VLAN tagging IEEE 802.1ad Q-in-Q VLAN stacking IEEE 802.1x Port Authentication Network Control IEEE 802.1ab LLDP IEEE 802.3af Power over Ethernet IEEE 802.3at Power over Ethernet Plus IEEE 802.3ah OAM IEEE 802.1ag Connectivity Fault Management (CFM) IEEE 1588 PTPv2 RFC 768 UDP RFC 793 TFTP RFC 791 IP RFC 792 ICMP RFC 2068 HTTP RFC 1112 IGMP v1 RFC 2236 IGMP v2 ITU-T G.8032 ERPS Ring ITU-T Y.1731 Performance Monitoring

Product specifications

Table 15 shows the product specifications for the FS IES3110&IES3100 series (8 Ports Without PoE) switches.

Table 15. Product specifications

Description	IES3110-8TF	IES3100-8TF	IES3110-8TF-R
Environmental			
Operating temperature	40 to 75° C (-40 to 167° F)	40 to 75° C (-40 to 167° F)	40 to 85° C (-40 to 185° F)
Storage temperature	40 to 75° C (-40 to 167° 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)
Temperature alarm	Not supported	Not supported	Not supported
Acoustic noise	No	No	No
Physical specifications			
Dimensions (HxWxD)	5.31"x2.20"x3.45" (135x56x87.8mm)	5.51"x2.04"x4.33" (140x52x110mm)	6.50"x5.12"x2.56" (165×130×65mm)
Weight	1.54 lbs (0.7kg)	1.54 lbs (0.7kg)	1.76 lbs (0.8kg)
Distance	100M	100M	100M
Electrical			
Voltage (auto ranging)	12-48VDC, 24VAC	18-60VDC	12-55VDC
Current	1A at 24V DC	0.2A (MAX)	-
Power rating (maximum consumption)	10W	10W	11.2W
Mean-time between failures			
MTBF (hours)	＞100000	≥400000	＞100000

Description	IES3110-8TF	IES3100-8TF	IES3110-8TF-R
Connectors			
Connectors and cabling	• 1GBASE-T ports: RJ-45 connectors, 4-pair Cat5E/Cat6 UTP cabling • SFP transceivers: LC fiber connectors (single-mode or multimode fiber)	• 1GBASE-T ports: RJ-45 connectors, 4-pair Cat5E/Cat6 UTP cabling • 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 of 12-48 VDC or 24 VAC. Use the supplied DC/AC power cord to connect the DC/AC power connector to an DC/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 18-60 VDC. Use the supplied DC power cord to connect the DC power connector to an DC 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 12-55 VDC. Use the supplied DC power cord to connect the DC power connector to an DC power outlet

Description	IES3110-8TF	IES3100-8TF	IES3110-8TF-R
Standards			
Standards	FCC Part 15 Class A, CE IEC60068-2-32 (free fall) IEC60068-2-27 (shock) IEC60068-2-6 (vibration) IEEE 802.3 10BASE-T IEEE 802.3u 100BASE-TX/100BASE-FX IEEE 802.3ab Gigabit 1000T IEEE 802.3z Gigabit SX/LX IEEE 802.3bz 2.5GBASE-X IEEE 802.3x flow control and back pressure IEEE 802.3ad port trunk with LACP IEEE 802.1D Spanning Tree Protocol IEEE 802.1w Rapid Spanning Tree Protocol IEEE 802.1s Multiple Spanning Tree Protocol IEEE 802.1p Class of Service IEEE 802.1Q VLAN tagging IEEE 802.1ad Q-in-Q VLAN stacking IEEE 802.1X Port Authentication Network Control IEEE 802.1ab LLDP IEEE 802.3ah OAM IEEE 802.1ag Connectivity Fault Management(CFM) IEEE 1588 PTPv2 RFC 768 UDP RFC 793 TFTP RFC 791 IP RFC 792 ICMP RFC 2068 HTTP RFC 1112 IGMP v1 RFC 2236 IGMP v2 RFC 3376 IGMP version 3 RFC 2710 MLD version 1 FRC 3810 MLD version 2 ITU-T G.8032 ERPS Ring ITU-T Y.1731 Performance Monitoring	802.1s, 802.1w, 802.1x, 802.1d, 802.1p, 802.1q, RMON, SNMPV1 V2 V3	EMI: FCC Part 15, CISPR (EN55032) class A

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 10 shows some of the authoritative certifications obtained by FS IES5100 / IES3110 / IES3100 Series Switches.

Figure 10.

Warranty, service and support

FS IES5100 / IES3110 / IES3100 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 16 provides the ordering information for IES5100 / IES3110 / IES3100 series switches.

Table 16. Ordering information

FS P/N	Product description
Switch hardware	
IES5100-24TF	IES5100-24TF, 24-Port Gigabit Ethernet L3 Managed Industrial Switch, 24 x 10/100/1000BASE-T, with 4 x 1Gb SFP, -40 to 85° C Operating Temperature
IES3110-24TF	IES3110-24TF, 24-Port Gigabit Ethernet L2+ Managed Industrial Switch, 24 x 10/100/1000BASE-T, with 4 x 1Gb Combo, -40 to 75° C Operating Temperature
IES3110-16TF	IES3110-16TF, 16-Port Gigabit Ethernet L2 Managed Industrial Switch, 16 x 10/100/1000BASE-T, with 2 x 1Gb SFP, -40 to 75° C Operating Temperature
IES3100-8TF-P	IES3100-8TF-P, 8-Port Gigabit Ethernet L2+ Managed Industrial PoE+ Switch, 8 x PoE+ Ports @240W, with 2 x 1/2.5Gb SFP, -40 to 75° C Operating Temperature
IES3110-8TFP-R	IES3110-8TFP-R, 8-Port Gigabit Ethernet L2+ Managed Industrial PoE+ Switch, 8 x PoE+ Ports @240W, with 2 x 1Gb SFP, -40 to 75° C Operating Temperature
IES3110-8TF-P	IES3110-8TF-P, 8-Port Gigabit Ethernet L2+ Managed Industrial PoE+ Switch, 8 x PoE+ Ports @240W, with 2 x 1/2.5Gb SFP, -40 to 75° C Operating Temperature
IES3110-8TF	IES3110-8TF, 8-Port Gigabit Ethernet L2+ Managed Industrial Switch, 8 x 10/100/1000BASE-T, with 2 x 1Gb SFP, -40 to 75° C Operating Temperature
IES3100-8TF	IES3100-8TF, 8-Port Gigabit Ethernet L2+ Managed Industrial Switch, 8 x 10/100/1000BASE-T, with 2 x 1/2.5Gb SFP, -40 to 75° C Operating Temperature
IES3110-8TF-R	IES3110-8TF-R, 8-Port Gigabit Ethernet L2+ Managed Industrial Switch, 8 x 10/100/1000BASE-T, with 2 x 1Gb SFP, -40 to 85° C Operating Temperature

Additional information

For more information about the IES5100 / IES3110 / IES3100 Series Switches, contact your account manager or visit https://www.fs.com/c/industrial-ethernet-switches-4073

Document history

New or revised topic	Described in	Date
Power supplies and fans	Power-supply input receptacles	4/12/2024

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FS has several offices around the world. Addresses, phone numbers are listed on the FS Website at https://www.fs.com/contact_us.html