

# FortiSwitch™ Rugged

High performance for harsh environments

FortiSwitch™ Rugged switches deliver all of the performance and security of the trusted FortiSwitch Secure, Simple, Scalable Ethernet solution, but with added reinforcement that makes them ideal for deployments in harsh environments.



Resilient, sturdy and capable of withstanding intense temperature fluctuations, FortiSwitch Rugged ensures the integrity and performance of mission-critical networks in even the most challenging of deployments.

## Add Ruggedized FortiGate for Tough and Powerful Protection

Engineered to survive in hostile environments with an extreme temperature range, the combination of FortiGate Rugged network security appliances with the FortiSwitch Rugged provides a connected network security solution.

## Simple Network Deployment

The Power over Ethernet (PoE) capability enables simple installation of cameras, sensors and wireless access points in the network, with power and data delivered over the same network cable.

There is no need to contract electricians to install power for your PoE devices, reducing your overall network TCO.

## Highlights

- Mean time between failure greater than 25 years
- Fanless passive cooling
- DIN-rail or wall-mountable
- Power over Ethernet capable including PoE+
- Redundant power input terminals

## Key Features and Benefits



Sturdy IP30 construction	Built to ingress protection 30 standards, the construction is designed to perform while enduring hostile conditions.
Passive cooling	With no fan and no moving parts, the mean time between failure is greater than 25 years.
Redundant power inputs	Maximizes network availability by eliminating the downtime associated with failure of a power input.
Power over Ethernet capability	Seamless integration of peripheral devices such as cameras, sensors and wireless access points into the network.

## Features

FORTISWITCH D-SERIES FORTILINK MODE (WITH FORTIGATE)	
<b>Management and Configuration</b>	
Auto Discovery of Multiple Switches	Yes
Number of Managed Switches per FortiGate	8 to 256 Depending on FortiGate Model (Please refer to admin-guide)
FortiLink Stacking (Auto Inter-Switch Links)	Yes
Software Upgrade of Switches	Yes
Centralized VLAN Configuration	Yes
Switch POE Control	Yes
Link Aggregation Configuration	Yes
Spanning Tree	Yes
LLDP/MED	Yes
IGMP Snooping	Yes (FSR-124D)
L3 Routing and Services	Yes (FortiGate)
Policy-based Routing	Yes (FortiGate)
Virtual Domain	Yes (FortiGate)
<b>Security and Visibility</b>	
802.1x Authentication (Port-based, MAC-based, MAB)	Yes
Syslog Collection	Yes
DHCP Snooping	Yes
Device Detection	Yes
MAC Black/White Listing	Yes (FortiGate)
Policy Control of Users and Devices	Yes (FortiGate)
<b>UTM Features</b>	
Firewall	Yes (FortiGate)
IPC, AV, Application Control, Botnet	Yes (FortiGate)
<b>High Availability</b>	
Support FortiLink FortiGate in HA Cluster	Yes
LAG support for FortiLink Connection	Yes

FORTISWITCH D-SERIES STANDALONE MODE	
<b>Layer 2</b>	
Jumbo Frames	Yes
Auto-negotiation for port speed and duplex	Yes
IEEE 802.1D MAC Bridging/STP	Yes
IEEE 802.1w Rapid Spanning Tree Protocol (RSTP)	Yes
IEEE 802.1s Multiple Spanning Tree Protocol (MSTP)	Yes
STP Root Guard	Yes
Edge Port / Port Fast	Yes
IEEE 802.1Q VLAN Tagging	Yes
Private VLAN	Yes (FSR-124D)
IEEE 802.3ad Link Aggregation with LACP	Yes
Unicast/Multicast traffic balance over trunking port (dst-ip, dst-mac, src-dst-ip, src-dst-mac, src-ip, src-mac)	Yes
IEEE 802.1AX Link Aggregation	Yes
Spanning Tree Instances (MSTP/CST)	15/1
IEEE 802.3x Flow Control and back-pressure	Yes
IEEE 802.3 10Base-T	Yes
IEEE 802.3u 100Base-TX	Yes
IEEE 802.3z 1000Base-SX/LX	Yes
IEEE 802.3ab 1000Base-T	Yes
IEEE 802.3 CSMA/CD Access Method and Physical Layer Specifications	Yes
Storm Control	Yes
MAC, IP, Ethertype-based VLANs	Yes
Virtual-Wire	Yes (FSR-124D)
Time-Domain Reflectometry (TDR) Support	Yes (FSR-124D)

# Features

FORTISWITCH D-SERIES STANDALONE MODE	
<b>Services</b>	
IGMP Snooping	Yes (FSR-124D)
<b>Security and Visibility</b>	
Port Mirroring	Yes
Admin Authentication Via RFC 2865 RADIUS	Yes
IEEE 802.1x authentication Port-based	Yes
IEEE 802.1x Authentication MAC-based	Yes
IEEE 802.1x Guest and Fallback VLAN	Yes
IEEE 802.1x MAC Access Bypass (MAB)	Yes
IEEE 802.1x Dynamic VLAN Assignment	Yes
sFlow	Yes
ACL	Yes (FSR-124D)
IEEE 802.1ab Link Layer Discovery Protocol (LLDP)	Yes
IEEE 802.1ab LLDP-MED	Yes
DHCP-Snooping	Yes
Dynamic ARP Inspection	Yes
Sticky MAC and MAC Limit	Yes (FSR-124D)
<b>Quality of Service</b>	
IEEE 802.1p Based Priority Queuing	Yes (FSR-124D)
IP TOS/DSCP Based Priority Queuing	Yes (FSR-124D)
<b>Management</b>	
IPv4 and IPv6 Management	Yes
Telnet / SSH	Yes
HTTP / HTTPS	Yes
SNMP v1/v2c/v3	Yes
SNTP	Yes
Standard CLI and web GUI interface	Yes
Software download/upload: TFTP/FTP/GUI	Yes
Managed from FortiGate	Yes
Support for HTTP REST APIs for Configuration and Monitoring	Yes
<b>Additional RFC and MIB Support</b>	
RFC 2571 Architecture for Describing SNMP Framework	Yes
DHCP Client	Yes
RFC 854 Telnet Server	Yes
RFC 2865 RADIUS	Yes
RFC 1643 Ethernet-like Interface MIB	Yes
RFC 1213 MIB-II	Yes
RFC 1354 IP Forwarding Table MIB	Yes
RFC 2572 SNMP Message Processing and Dispatching	Yes
RFC 1573 SNMP MIB II	Yes
RFC 1157 SNMPv1/v2c	Yes
RFC 2030 SNTP	Yes

# Specifications

	FSR-112D-POE	FSR-124D
<b>Ethernet</b>		
Ethernet Interface	8x GE RJ45 (including 8x PoE/PoE+ capable ports), 4x GE SFP slots PoE is 802.3af PoE+ is 802.3at	16x GE RJ45, 4x GE SFP slots 8 shared media interfaces (GE RJ45 / GE SFP slots)
Console Interface	DB9 connector	DB9 connector
Operating Mode	Store and forward, L2/L3 wire-speed/non-blocking switching engine	Store and forward, L2/L3 wire-speed/non-blocking switching engine
MAC Addresses	8K	8K
Switching Capacity	24 Gbps	56 Gbps
Packets Per Second	46 Mpps	83 Mpps
VLANs Supported	4K	4K
DRAM	512 MB	512 MB
FLASH	64 MB	512 MB
<b>Copper RJ45 Ports</b>		
Speed	10/100/1000 Mbps	10/100/1000 Mbps
MDI/MDIX Auto-crossover	Support straight or cross wired cables	Support straight or cross wired cables
Auto-negotiating	10/100/1000 Mbps speed auto-negotiation; Full and half duplex	10/100/1000 Mbps speed auto-negotiation; Full and half duplex
PoE+ (PSE)	IEEE 802.3at, up to 30 W per RJ45 GE port (up to 8 PoE+ ports)	N/A
<b>SFP (pluggable) Ports</b>		
Port Types Supported	Gigabit fiber multimode, fiber single mode, fiber long-haul single mode 1000Base(SX/LX/ZX)	Gigabit fiber multimode, fiber single mode, fiber long-haul single mode 1000Base(SX/LX/ZX)
Fiber Port Connector	LC typically for fiber (depends on module)	LC typically for fiber (depends on module)
<b>Power</b>		
Power Input	Redundant input terminals	Redundant input terminals
Input Voltage Range	44–57V DC (for PoE model), 12–57 V (non-PoE model), 44–49V input voltage can support PoE (802.3af) on all ports, 50–57V input voltage can support PoE+ (802.3at) on all ports.	44–57V DC
Reverse Power Protection	Yes	
Switch Power	With 8x PoE+ sources, the switch itself draws 10.4 W	25.434 W (Maximum)
Heat Dissipation	The switch dissipates 69.6 BTU/h with 8x PoE+ devices attached	117.49 BTU/h
<b>Indicators</b>		
Power Status Indication	Indication of power input status	Indication of power input status
PoE Indication	PoE port status	N/A
Ethernet Port Indication	Link and speed	Link and speed
<b>Environment</b>		
Operating Temperature Range	-40–167°F (-40–75°C) cold startup at -40°C/°F	-40–185°F (-40–85°C)
Storage Temperature Range	-40–185°F (-40–85°C)	-40–185°F (-40–85°C)
Humidity	5–95% RH non-condensing	10–95% non-condensing
MTBF	> 30 years	> 30 years
Cooling	Fanless	Fanless
<b>Certification and Compliances</b>		
EMI	Radiated Emission: CISPR 22, EN55022 Class B Conducted Emission: EN55022 Class B	Radiated Emission: CISPR 22, EN55022 Class B Conducted Emission: EN55022 Class B
EMS	ESD: IEC61000-4-2 Radiated RF (RS): IEC61000-4-3 EFT: IEC61000-4-4 Surge: IEC61000-4-5 Conducted RF (CS): IEC61000-4-6	ESD: IEC61000-4-2 Radiated RF (RS): IEC61000-4-3 EFT: IEC61000-4-4 Surge: IEC61000-4-5 Conducted RF (CS): IEC61000-4-6
RoHS and WEEE	RoHS (Pb free) and WEEE compliant	Compliant
FCC	Yes	Yes, with supplementary IEEE 1613
ICES	Yes	Yes
CE	Yes, with supplementary EN50155, EN50121-1, EN50121-3-2, EN50121-4, EN 61000-6-4	Yes, with supplementary IEC 61850-3
RCM	Yes	Yes
VCCI	Yes	Yes
BSMI	Yes	Yes
CB	Yes	Yes
UL/cUL	Yes, with additional Class I, Division 2, Groups A, B, C, D	Yes
ATEX	ATEX 2218X	

## Specifications

	FSR-112D-POE	FSR-124D
<b>Mechanical</b>		
Ingress Protection	IP30	IP40
Installation Option	DIN-Rail mounting, wall mounting	Rack mount
<b>Dimensions</b>		
Length x Width x Height	3.8 x 4.15 x 6.06 inches (96.4 x 105.5 x 154 mm)	17.40 x 13.86 x 1.73 inches (442 x 352 x 44 mm)
Weight	2.7 lbs (1230 g)	12.78 lbs (5.80 kg)
<b>Warranty</b>		
Fortinet warranty	Limited lifetime*	

\* Fortinet Warranty Policy: <http://www.fortinet.com/doc/legal/EULA.pdf>

## Order Information

Product	SKU	Description
FortiSwitch Rugged 112D-POE	FSR-112D-POE	Ruggedized L2 PoE Switch — 8x GE RJ45 (including 8x PoE/PoE+ capable ports), 4x GE SFP slots, FortiGate switch controller compatible.
FortiSwitch Rugged 124D	FSR-124D	Ruggedized L2 Switch — 16x GE RJ45, 4x GE SFP slots, 8x shared media pairs (including 8x GE RJ45, 8x GE SFP slots), FortiGate switch controller compatible.
<b>Accessories</b>		
1 GE SFP LX Transceiver Module	FG-TRAN-LX	1 GE SFP LX transceiver module for all systems with SFP and SFP/SFP+ slots.
1 GE SFP RJ45 Transceiver Module	FG-TRAN-GC	1 GE SFP RJ45 transceiver module for all systems with SFP and SFP/SFP+ slots.
1 GE SFP SX Transceiver Module	FG-TRAN-SX	1 GE SFP SX transceiver module for all systems with SFP and SFP/SFP+ slots.
1 GE SFP RJ45 Transceiver Module	FS-TRAN-GC	1 GE SFP RJ45 transceiver module for FortiSwitch with SFP and SFP/SFP+ slots.
1 GE SFP SX Transceivers, MMF, -40–85°C operation	FR-TRAN-SX	1 GE SFP SX transceiver module, -40–85°C, over MMF, for all systems with SFP and SFP/SFP+ slots.
1 GE SFP LX Transceivers, SMF, -40–85°C operation	FR-TRAN-LX	1 GE SFP LX transceiver module, -40–85°C, over SMF, for all systems with SFP and SFP/SFP+ slots.
1 GE SFP Transceivers, 90 km range, -40–85°C operation	FR-TRAN-ZX	1 GE SFP transceivers, -40–85°C operation, 90 km range for all systems with SFP slots.
100base-FX SFP Transceiver Module	FS-TRAN-FX	100Mb multimode SFP transceivers, -40–85°C operation, 500m (OM1 fiber) range for systems with SFP slots and capable of 10/100/1000Mb mode selection.

FS-TRAN-FX is supported in FSR-112D-POE.

For details of Transceiver modules, see the [Fortinet Transceivers datasheet](#).



[www.fortinet.com](http://www.fortinet.com)

Copyright © 2019 Fortinet, Inc. All rights reserved. Fortinet®, FortiGate®, FortiCare® and FortiGuard®, and certain other marks are registered trademarks of Fortinet, Inc., and other Fortinet names herein may also be registered and/or common law trademarks of Fortinet. All other product or company names may be trademarks of their respective owners. Performance and other metrics contained herein were attained in internal lab tests under ideal conditions, and actual performance may vary. Network variables, different network environments and other conditions may affect performance results. Nothing herein represents any binding commitment by Fortinet, and Fortinet disclaims all warranties, whether express or implied, except to the extent Fortinet enters a binding written contract, signed by Fortinet's General Counsel, with a purchaser that expressly warrants that the identified product will perform according to certain expressly-identified performance metrics and, in such event, only the specific performance metrics expressly identified in such binding written contract shall be binding on Fortinet. For absolute clarity, any such warranty will be limited to performance in the same ideal conditions as in Fortinet's internal lab tests. Fortinet disclaims in full any covenants, representations, and guarantees pursuant hereto, whether express or implied. Fortinet reserves the right to change, modify, transfer, or otherwise revise this publication without notice, and the most current version of the publication shall be applicable. Fortinet disclaims in full any covenants, representations, and guarantees pursuant hereto, whether express or implied. Fortinet reserves the right to change, modify, transfer, or otherwise revise this publication without notice, and the most current version of the publication shall be applicable.