FortiSwitch Rugged

Secure, Ruggedized Ethernet Switching

Available in:

Appliance

Highlights

Durable. Mean time between failure is greater than 25 years. Designed to perform while enduring hostile conditions with built to ingress protection up to IP30 and IP40 standards

Industrial Application Ready. Supports: Precision Time Protocol IEEE1588v2, HSR/PRP to implement zero-loss redundancy on wired Ethernet, and meets power substations requirements IEEE1613 / IEC 61850-3

Fanless. Passive cooling with no fan and no moving parts

High Performance. Gigabit Ethernet speeds and above on all ports with auto negotiation to support legacy devices

Next-Generation PoE Support. With PoE support in all models and next-generation PoE++ in specific models, FortiSwitch Rugged can deliver and manage power where needed for devices such as cameras, sensors, and wireless access points

Multiple Form Factors. DIN-rail and rack mount options

Zero-touch Deployment. Auto discovery and simplified configuration enable rapid deployment of network services

Layer 2 and Layer 3 Options

Entry-Level NAC Included*. Secure onboarding standard IoT devices at no additional charge with the FortiGuard IoT service, available for OT

Redundant Power Inputs. Maximize network availability by eliminating the downtime associated with failure of a power input

Performance and Features Designed for Harsh Environments

FortiSwitch™ Rugged switches deliver all of the enterprise features, performance, and security of the trusted FortiSwitch secure, simple, scalable Ethernet solution. Our rugged switches have added hardware reinforcement and software features that make them ideal for deployments in hostile environments, as well as operational technology (OT) industrial and control networks.

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. When united with FortiGate Rugged Next-Generation Firewalls, IT and OT network administrators can deploy a converged Ethernet architecture that offers powerful cybersecurity protection engineered to survive in hostile environments.

Security-Driven Networking Through FortiLink

FortiLink is an innovative proprietary management protocol that allows FortiGates to seamlessly manage any FortiSwitch. FortiLink enables the FortiSwitch to become a logical extension of the FortiGate, integrating it directly into the Fortinet Security Fabric. This management option reduces complexity and decreases management costs as network security and access layer functions are enabled and managed through a single console.

FortiLink integration enables centralized policy management and offers basic network access control (NAC) functionality, making both easy to implement and manage. This converged Security-Driven architecture, centered around the FortiGate running FortiOS, offers better protection and lower cost of ownership than multiple point products. Coupled with the FortiGuard Industrial Security Service, it ensures that critical networks receive real-time protection.

*Requires FortiLink- enabled deployment

Features

Operational Technology Applications

IT/OT convergence has created opportunities for improved reliability and performance. The Fortinet LAN Edge solution enables OT network administrators to take advantage of these gains while introducing cybersecurity into previously air-gapped systems. FortiGate, FortiSwitch, and FortiAP access points are all available in rugged or hardened form factors to offer a convergence of networking and security to both protect and enhance critical OT industrial and control networks.

Durability, Power, and Speed with Zero-touch Manageability

The FortiSwitch Rugged series offers durability coupled with the Gigabit Ethernet (GbE) speeds necessary for today's mission-critical hardened applications. Zero-touch deployment and scalable NOC management options simplify the administration and support of Ethernet networks and their security, without complex licensing.

As local area network (LAN) requirements continue to evolve, power has become an important consideration when evaluating Ethernet switches. FortiSwitch Rugged with advanced PoE options like PoE++ enables IT and OT admins to future-proof their Ethernet access layer. These PoE capabilities let IT managers deploy and power IoT devices such as cameras, sensors, and wireless access points in the network, with power and data delivered over the same network cable.

Refer to the FortiSwitch Feature Matrix for details about the features supported by each FortiSwitch model.

FORTISWITCH FORTILINK MODE (WITH FORTIGATE)
Management and Configuration
Auto Discovery of Multiple Switches
Automated detection and recommendations
Centralized VLAN Configuration
Dynamic Port Profiles for FortiSwitch ports
FortiLink Secure Fabric
FortiLink Stacking (Auto Inter-Switch Links)
FortiSwitch Management over VXLAN
Health Monitoring
IGMP Snooping
L3 Routing and Services (FortiGate)
Link Aggregation Configuration
LLDP/MED
Managed Switches 8 to 300 depending on FortiGate model
Policy-Based Routing (FortiGate)
Provision firmware upon authorization
Software Upgrade of Switches
Spanning Tree
Switch POE Control
Virtual Domain (FortiGate)
High Availability
Active-Active Split LAG from FortiGate to FortiSwitches for Advanced Redundancy
LAG support for FortiLink Connection
Support FortiLink FortiGate in HA Cluster

FORTISWITCH FORTILINK MODE (WITH FORTIGATE)
Security and Visibility
Authentication 802.1X (Port-based, MAC-based, MAB)
Block Intra-VLAN Traffic
Clients Monitoring
Device Detection
DHCP Snooping
DHCP/ARP Monitor
FortiGuard IoT identification
FortiSwitch recommendations in Security Rating
Host Quarantine on Switch Port
Integrated FortiGate Network Access Control (NAC) function
MAC Black/White Listing (FortiGate)
NAC Device Telemetry
Network Device Detection
Policy Control of Users and Devices (FortiGate)
Port Statistics
Security Fabric Automation
Switch Controller traffic collector
Syslog Collection
UTM Features
Firewall (FortiGate)
IPC, AV, Application Control, Botnet (FortiGate)

Features

Refer to the FortiSwitch Feature Matrix for details about the features supported by each FortiSwitch model.

FORTISWITCH
Layer 2
Auto-negotiation for Port Speed and Duplex
Auto topology
Dynamically shared packet buffers
Edge Port / Port Fast
IEEE 802.1ad QinQ
IEEE 802.1AX Link Aggregation
IEEE 802.1D MAC Bridging/STP
IEEE 802.1Q VLAN Tagging
IEEE 802.1s Multiple Spanning Tree Protocol (MSTP)
IEEE 802.1w Rapid Spanning Tree Protocol (RSTP)
IEEE 802.3 10Base-T
IEEE 802.3ab 1000Base-T
IEEE 802.3ad Link Aggregation with LACP
IEEE 802.3ae 10 Gigabit Ethernet
IEEE 802.3az Energy Efficient Ethernet
IEEE 802.3ba, 802.3bj, and 802.3bm 40 and 100 Gigabit Ethernet
IEEE 802.3bz Multi Gigabit Ethernet
IEEE 802.3 CSMA/CD Access Method and Physical Layer Specifications
IEEE 802.3u 100Base-TX
IEEE 802.3x Flow Control and Back-pressure
IEEE 802.3z 1000Base-SX/LX
Ingress Pause Metering
Jumbo Frames
LAG min/max bundle
Loop Guard
MAC, IP, Ethertype-based VLANs
MDI/MDIX Auto-crossover
Per-port storm control
Priority-based Flow Control (802.1Qbb)
Private VLAN
Rapid PVST interoperation
Spanning Tree Instances (MSTP/CST)
Storm Control
STP BPDU Guard
STP Root Guard
Time-Domain Reflectcometry (TDR) Support
Unicast/Multicast traffic balance over trunking port (dst-ip, dst-mac, src-dst-ip, src-dst-mac, src-ip, src-mac)
Virtual-Wire
VLAN Mapping
Services
IGMP proxy / querier
IGMP Snooping
MLD proxy / querier
MLD Snooping

FORTISWITCH
Layer 3
Bidirectional Forwarding Detection (BFD)
DHCP Relay
DHCP server
Dynamic Routing Protocols: OSPFv2, RIPv2, VRRP, BGP, ISIS
ECMP
Filtering routemaps based on routing protocol
IP conflict detection and notification
IPv6 route filtering
Multicast Protocols: PIM-SSM *
Static Routing (Hardware-based)
Unicast Reverse Path Forwarding - uRPF
Security and Visibility
ACL
ACL Multiple Ingress
ACL Schedule
Admin Authentication Via RFC 2865 RADIUS
Assign VLANs via Radius attributes (RFC 4675)
DHCP-Snooping
DHCP/ARP Monitor
Dynamic ARP Inspection
Flow Export (NetFlow and IPFIX)
IEEE 802.1ab Link Layer Discovery Protocol (LLDP)
IEEE 802.1ab LLDP-MED
IEEE 802.1X Authentication MAC-based
IEEE 802.1X Authentication Port-based
IEEE 802.1X Dynamic VLAN Assignment
IEEE 802.1X EAP pass-through
IEEE 802.1X Guest and Fallback VLAN
IEEE 802.1X MAC Access Bypass (MAB)
IEEE 802.1X open auth
IP source guard
IPv6 RA Guard
LLDP-MED ELIN support
MAC-IP Binding
Per-port and per-VLAN MAC learning limit
Port Mirroring
Radius Accounting
Radius CoA (Change of Authority)
sFlow
Sticky MAC and MAC Limit
Wake on LAN

Features

Refer to the FortiSwitch Feature Matrix for details about the features supported by each FortiSwitch model.

FORTISWITCH
High Availability
IEC 62439-2 Media Redundancy Protocol - MRP
IEC 62439-3 Clause 4 Parallel Redundancy Protocol - PRP
IEC 62439-3 Clause 5 High-availability Seamless Redundancy - HSR
IEEE 1588v2 PTP Transparent and Boundary Clock
IEEE 1588v2 PTP Default and Power Profiles
Multi-Chassis Link Aggregation (MCLAG)
Quality of Service
Egress priority tagging
Explicit Congestion Notification
IEEE 802.1p Based Priority Queuing
IP TOS/DSCP Based Priority Queuing
Percentage Rate Control

FORTISWITCH
Management
Automation Stitches
Display Average Bandwidth and Allow Sorting on Physical Port / Interface Traffic
Dual Firmware Support
HTTP / HTTPS
IPv4 and IPv6 Management
Link Monitor
Managed from FortiGate
Packet Capture
POE Control Modes
Provide warning if L2 table is getting full
RMON Group 1
SNMP v1/v2c/v3
SNMP v3 traps
SNTP
Software download/upload: TFTP/FTP/GUI
SPAN, RSPAN, and ERSPAN
Standard CLI and Web GUI Interface
Support for HTTP REST APIs for Configuration and Monitoring
Syslog UDP/TCP
System alias command
System Temperature and Alert
Telnet / SSH

RFC Compliance

RFC and MIB Support*
BFD
RFC 5880: Bidirectional Forwarding Detection (BFD)
RFC 5881: Bidirectional Forwarding Detection (BFD) for IPv4 and IPv6 (Single Hop)
RFC 5882: Generic Application of Bidirectional Forwarding Detection (BFD)
BGP
RFC 1771: A Border Gateway Protocol 4 (BGP-4)
RFC 1965: Autonomous System Confederations for BGP
RFC 1997: BGP Communities Attribute
RFC 2545: Use of BGP-4 Multiprotocol Extensions for IPv6 Inter-Domain Routing
RFC 2796: BGP Route Reflection - An Alternative to Full Mesh IBGP
RFC 2842: Capabilities Advertisement with BGP-4
RFC 2858: Multiprotocol Extensions for BGP-4
RFC 4271: BGP-4
RFC 6286: Autonomous-System-Wide Unique BGP Identifier for BGP-4
RFC 6608: Subcodes for BGP Finite State Machine Error
RFC 6793: BGP Support for Four-Octet Autonomous System (AS) Number Space
RFC 7606: Revised Error Handling for BGP UPDATE Messages
RFC 7607: Codification of AS 0 Processing
RFC 7705: Autonomous System Migration Mechanisms and Their Effects on the BGP AS_PATH Attribute
RFC 8212: Default External BGP (EBGP) Route Propagation Behavior without Policies
RFC 8654: Extended Message Support for BGP
DHCP
RFC 2131: Dynamic Host Configuration Protocol
RFC 3046: DHCP Relay Agent Information Option
RFC 7513: Source Address Validation Improvement (SAVI) Solution for DHCP
IP/IPv4
RFC 2697: A Single Rate Three Color Marker
RFC 3168: The Addition of Explicit Congestion Notification (ECN) to IP
RFC 5227: IPv4 Address Conflict Detection
RFC 5517: Cisco Systems' Private VLANs: Scalable Security in a Multi-Client Environment
RFC 7039: Source Address Validation Improvement (SAVI) Framework

RFC and MIB Support*
IP Multicast
RFC 2710: Multicast Listener Discovery (MLD) for IPv6 (MLDv1)
RFC 3569: An Overview of Source-Specific Multicast (SSM)
RFC 4541: Considerations for Internet Group Management Protocol (IGMP) and Multicast Listener Discovery (MLD) Snooping Switches
RFC 4605: Internet Group Management Protocol (IGMP)/Multicast Listener Discovery (MLD)-Based Multicast Forwarding ("IGMP/MLD Proxying")
RFC 4607: Source-Specific Multicast for IP
IPv6
RFC 2464: Transmission of IPv6 Packets over Ethernet Networks: Transmission of IPv6 Packets over Ethernet Networks
RFC 2474: Definition of the Differentiated Services Field (DS Field) in the and IPv6 Headers (DSCP)
RFC 2893: Transition Mechanisms for IPv6 Hosts and Routers
RFC 4213: Basic Transition Mechanisms for IPv6 Hosts and Router
RFC 4291: IP Version 6 Addressing Architecture
RFC 4443: Internet Control Message Protocol (ICMPv6) for the Internet Protocol Version 6 (IPv6) Specification
RFC 4861: Neighbor Discovery for IP version 6 (IPv6)
RFC 4862: IPv6 Stateless Address Auto configuration
RFC 5095: Deprecation of Type 0 Routing Headers in IPv6
RFC 6724: Default Address Selection for Internet Protocol version 6 (IPv6)
RFC 7113: IPv6 RA Guard
RFC 8200: Internet Protocol, Version 6 (IPv6) Specification
RFC 8201: Path MTU Discovery for IP version 6
IS-IS
RFC 1195: Use of OSI IS-IS for Routing in TCP/IP and Dual Environments
RFC 5308: Routing IPv6 with IS-IS
MIB
RFC 1213: MIB II parts that apply to FortiSwitch 100 units
RFC 1354: IP Forwarding Table MIB
RFC 1493: Bridge MIB
RFC 1573: SNMP MIB II
RFC 1643: Ethernet-like Interface MIB

* RFC and MIB supported by FortiSwitch Operating System. Check FortiSwitch Feature Matrix for model specific support.

RFC Compliance

MIB
RFC 1724: RIPv2-MIB
RFC 1850: OSPF Version 2 Management Information Base
RFC 2233: The Interfaces Group MIB using SMIv2
RFC 2618: Radius-Auth-Client-MIB
RFC 2620: Radius-Acc-Client-MIB
RFC 2674: Definitions of Managed Objects for Bridges with Traffic Classes, Multicast Filtering and Virtual LAN extensions
RFC 2787: Definitions of Managed Objects for the Virtual Router Redundancy Protocol
RFC 2819: Remote Network Monitoring Management Information Base
RFC 2863: The Interfaces Group MIB
RFC 2932: IPv4 Multicast Routing MIB
RFC 2934: Protocol Independent Multicast MIB for IPv4
RFC 3289: Management Information Base for the Differentiated Services Architecture
RFC 3433: Entity Sensor Management Information Base
RFC 3621: Power Ethernet MIB
RFC 6933: Entity MIB (Version 4)
OSPF
RFC 1583: OSPF version 2
RFC 1765: OSPF Database Overflow
RFC 2328: OSPF version 2
RFC 2370: The OSPF Opaque LSA Option
RFC 2740: OSPF for IPv6
RFC 3101: The OSPF Not-So-Stubby Area (NSSA) Option
RFC 3137: OSPF Stub Router Advertisement
RFC 3623: OSPF Graceful Restart
RFC 5340: OSPF for IPv6 (OSPFv3)
RFC 5709: OSPFv2 HMAC-SHA Cryptographic Authentication
RFC 6549: OSPFv2 Multi-Instance Extensions
RFC 6845: OSPF Hybrid Broadcast and Point-to-Multipoint Interface Type
RFC 6860: Hiding Transit-Only Networks in OSPF
RFC 7474: Security Extension for OSPFv2 When Using Manual Key Management
RFC 7503: OSPF for IPv6
RFC 8042: CCITT Draft Recommendation T.4
RFC 8362: OSPFv3 Link State Advertisement (LSA) Extensibility

OTHER
RFC 2030: SNTP
RFC 3176: InMon Corporation's sFlow: A Method for Monitoring Traffic in Switched and Routed Networks
RFC 3768: VRRP
RFC 3954: Cisco Systems NetFlow Services Export Version 9
RFC 5101: Specification of the IP Flow Information Export (IPFIX) Protocol for the Exchange of Flow Information
RFC 5798: VRRPv3 (IPv4 and IPv6)
RADIUS
RFC 2865: Admin Authentication Using RADIUS
RFC 2866: RADIUS Accounting
RFC 4675: RADIUS Attributes for Virtual LAN and Priority Support
RFC 5176: Dynamic Authorization Extensions to Remote Authentication Dial In User Service (RADIUS)
RIP
RFC 1058: Routing Information Protocol
RFC 2080: RIPng for IPv6
RFC 2082: RIP-2 MD5 Authentication
RFC 2453: RIPv2
RFC 4822: RIPv2 Cryptographic Authentication
SNMP
RFC 1157: SNMPv1/v2c
RFC 2571: Architecture for Describing SNMP
RFC 2572: SNMP Message Processing and Dispatching
RFC 2573: SNMP Applications
RFC 2576: Coexistence between SNMP versions

* RFC and MIB supported by FortiSwitch Operating System. Check FortiSwitch Feature Matrix for model specific support.

Specifications

	FSR-108F	FSR-112F-POE
Hardware Specifications		
Total Network Interfaces	6× 1G/100M/10M RJ45 2× 1G/100M SFP	8× 1G/100M/10M RJ45 4× 1G/100M SFP
10/100/1000 Service Ports	1	1
RJ-45 Serial Console Port	1	1
Power over Ethernet (PoE) Ports	—	8 (802.3af/at/bt (90W))
PoE Power Budget	—	240W
System Specifications		
Switching Capacity (Duplex)	16 Gbps	24 Gbps
Packets per Second (Duplex)	23.8 Mpps	35.7 Mpps
MAC Address Storage	16k	16k
Network Latency	< 1µs	< 1µs
VLANs Supported	4k	4k
Link Aggregation Group Size	6	8
Total Link Aggregation Groups	Up to number of ports	Up to number of ports
Queues/Port	—	—
Packet Buffers	1.5 MB	1.5 MB
DRAM	1 GB DDR4	1 GB DDR4
FLASH	32 MB SPI + 1 GB NAND	32 MB SPI + 1 GB NAND
ACL	240	240
Spanning Tree Instances	32	32
IPv4/IPv6 Hardware-based Routing	—	—
Route Entries (IPv4/IPv6)	—	—
Host Entries (IPv4/IPv6)	—	—
Multicast Route Entries	—	—
Power		
Power Input	Redundant input terminals	Redundant input terminals
Input Voltage Range	+/-12V to +/-57V DC	+/-50V to +/-57V DC to support PoE output +/-12V to +/-57V DC to support non-POE operation
Reverse Power Protection	Yes	Yes
Power Consumption (Maximum)	17 W	25 W (without PoE) 396 W (with PoE)
Heat Dissipation	58 BTU/h	900 BTU/h (with PoE) 75 BTU/h (without PoE)
Environment		
Operating Temperature Range	Operating temperature: -40°C to 75°C -40°C to 65°C (sealed enclosure - 0m/s air flow) -40°C to 70°C (vented enclosure - 0.2m/s air flow) -40°C to 75°C (fan or blower equipped enclosure - 1m/s air flow)	Operating temperature: -40°C to 75°C -40°C to 65°C (sealed enclosure - 0m/s air flow) -40°C to 70°C (vented enclosure - 0.2m/s air flow) -40°C to 75°C (fan or blower equipped enclosure - 1m/s air flow)
Operating Altitude	3000m within -40°C to 55°C (2000m within -40°C to 75°C)	3000m within -40°C to 55°C (2000m within -40°C to 75°C)
Storage Temperature Range	-40°F to 185°F (-40°C to 85°C)	-40°F to 185°F (-40°C to 85°C)
Humidity	5% to 90% RH non-condensing	5% to 90% RH non-condensing
Mean Time Between Failures	> 30 years	> 30 years
Cooling	Fanless	Fanless

Specifications

	FSR-108F	FSR-112F-POE
Industry Compliance and Certifications		
EMI	FCC, CE, RCM, VCCI, BSMI (Class A), ICES, UKCA	FCC, CE, RCM, VCCI, BSMI (Class A), ICES, UKCA
EMS	CE, UKCA	CE, UKCA
RoHS and WEEE	Compliant	Compliant
FCC	FCC Part 15, Subpart B, Class A	FCC Part 15, Subpart B, Class A
CE	Electro Magnetic Compatibility (EMC) Directive 2014/30/EU EN 55032:2015:2020, Class A EN 55035:2017/A11:2020 CISPR 32 ESD: IEC61000-4-2 Radiated RF (RS): IEC61000-4-3 EFT: IEC61000-4-4 Surge: IEC61000-4-5 Conducted RF (CS): IEC61000-4-6 Power Frequency Magnetic Field: IEC61000-4-8	Electro Magnetic Compatibility (EMC) Directive 2014/30/EU EN 55032:2015:2020, Class A EN 55035:2017/A11:2020 CISPR 32 ESD: IEC61000-4-2 Radiated RF (RS): IEC61000-4-3 EFT: IEC61000-4-4 Surge: IEC61000-4-5 Conducted RF (CS): IEC61000-4-6 Power Frequency Magnetic Field: IEC61000-4-8
ISED	ICES-003:2020 Issue 7, Class A	ICES-003:2020 Issue 7, Class A
RCM	AS/NZS CISPR 32, Class A	AS/NZS CISPR 32, Class A
VCCI	VCCI-CISPR-32:2016, Class A	VCCI-CISPR-32:2016, Class A
BSMI	CNS 15936 (2016), Class A, CNS 15598-1 (2020)	CNS 15936 (2016), Class A, CNS 15598-1 (2020)
CB	Low Voltage Directive (LVD) 2014/35/EU IEC 62368-1 2nd Edition IEC 62368-1 3rd Edition	Low Voltage Directive (LVD) 2014/35/EU IEC 62368-1 2nd Edition IEC 62368-1 3rd Edition
UL/cUL	UL 62368-1 3rd Edition	UL 62368-1 3rd Edition
Mechanical		
Ingress Protection	IP40	IP40
Form Factor	DIN-rail	DIN-rail
Dimensions		
Height x Width x Length (inches)	4.45 × 2.17 × 5.52	5 × 2.62 × 5.91
Height x Width x Length (mm)	113 × 55 × 140	127 × 66.5 × 150
Weight	1.25 lbs (566 g)	2.26 lbs (1023 g)
Warranty		
Fortinet warranty	Limited lifetime* warranty on all models	

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

Specifications

	FSR-112D-POE	FSR-216F-POE	FSR-424F-POE
Hardware Specifications			
Total Network Interfaces	8× 10/100 Mbps /1 GE RJ45 4× 100Mbps / 1 GE SFP ports	16× 10M/100M/1G RJ45 4× 1G/10G SFP/SFP+	12× 1/2.5 GE RJ45, 12× 1/2.5 GE SFP 4× 10G SFP+, 2× 40G QSFP+ ports
10/100/1000 Service Ports	—	1	1
RJ-45 Serial Console Port	1	1	1
Power over Ethernet (PoE) Ports	8 (802.3af/at)	16 (802.3af/at/bt (90W))	12 [802.3af/at/UPOE (60W)]
PoE Power Budget	240W	360W	421W
System Specifications			
Switching Capacity (Duplex)	24 Gbps	112 Gbps	360 Gbps
Packets per Second (Duplex)	36 Mpps	166 Mpps	536 Mpps
MAC Address Storage	8k	16k	32k
Network Latency	< 2 µs	< 1µs	<1µs
VLANs Supported	4k	4k	4k
Link Aggregation Group Size	Up to 12	8	Up to 24
Total Link Aggregation Groups	Up to number of ports	Up to number of ports	Up to number of ports
Queues/Port	-	-	8
Packet Buffers	1 MB	1.5MB	4MB
DRAM	512 MB	1GB DDR4	1GB
FLASH	64 MB	32MB SPI + 1GB NAND	256MB
ACL	130	2k	1.5k
Spanning Tree Instances	32	32	32
IPv4/IPv6 Hardware-based Routing	—	—	Yes
Route Entries (IPv4/IPv6)	—	—	16k/8k
Host Entries (IPv4/IPv6)	—	—	16k/7k
Multicast Route Entries	—	—	4k
Power			
Power Input	Redundant input terminals	Redundant input terminals	Redundant input terminals
Input Voltage Range	+/-48V to +/-57V DC to support PoE output +/-50V to +/-57V DC to support PoE+ output +/-12V to +/-57V DC to support non-POE operation	+/-50V to +/-57V DC to support PoE output +/-12V to +/-57V DC to support non-POE operation	41 to 125Vdc, 15A max. to support PoE 18 to 40Vdc, 6.5A to support non-PoE operation
Reverse Power Protection	Yes	Yes	Yes
Power Consumption (Maximum)	10.12W (without PoE) 286.43 (with PoE)	25W (without PoE) 396W (with PoE)	107.1W (without PoE) 528.6W (with PoE)
Heat Dissipation	822 BTU/h (with PoE) 68.65 BTU/h (without PoE)	1353 BTU/h (with PoE) 85.25 BTU/h (without PoE)	1704 BTU/h (with PoE) 313.4 BTU/h (without PoE)
Environment			
Operating Temperature Range	-40°F to 167°F (-40°C to 75°C) cold startup at -40°C/°F)	-40°F to 167°F (-40°C to 75°C) (cold startup at -40°C/°F) Maximum operating temperature with PoE: 75°C with 240W PSE 60°C with 360W PSE	-40°C to 70°C Maximum operating temperature with PoE: 70°C with 105W PSE 60°C with 315W PSE 50°C with 420W PSE
Operating Altitude	4000m within -40°C to 55°C (2000m within -40°C to 75°C)	3000m within -40°C to 55°C (2000m within -40°C to 75°C)	2000M above sea level
Storage Temperature Range	-40°F to 185°F (-40°C to 85°C)	-40°F to 185°F (-40°C to 85°C)	-40°F to 185°F (-40°C to 85°C)
Humidity	5% to 95% RH non-condensing	5% to 95% RH non-condensing	5% to 95% RH non-condensing
Mean Time Between Failures	> 30 years	> 30 years	> 30 years
Cooling	Fanless	Fanless	Fanless

Specifications

	FSR-112D-POE	FSR-216F-POE	FSR-424F-POE
Industry Compliance and Certifications			
EMI	FCC, CE, RCM, VCCI, BSMI (Class A), ICES, UKCA	FCC, CE, RCM, VCCI, BSMI (Class A), ICES, UKCA	FCC, CE, RCM, VCCI, BSMI (Class A), ICES, UKCA
EMS	CE, UKCA	CE, UKCA	CE, UKCA
RoHS and WEEE	Compliant	Compliant	Compliant
FCC	FCC Part 15, Subpart B, Class A	FCC Part 15, Subpart B, Class A	FCC Part 15, Subpart B, Class A
CE	Electro Magnetic Compatibility (EMC) Directive 2014/30/EU EN 55032:2015:2020, Class A EN 55035:2017/A11:2020 CISPR 32 ESD: IEC61000-4-2 Radiated RF (RS): IEC61000-4-3 EFT: IEC61000-4-4 Surge: IEC61000-4-5 Conducted RF (CS): IEC61000-4-6 Power Frequency Magnetic Field: IEC61000-4-8 Emission standard for industrial environments: EN 61000-6-4	Electro Magnetic Compatibility (EMC) Directive 2014/30/EU EN 55032:2015:2020, Class A EN 55035:2017/A11:2020 CISPR 32 ESD: IEC61000-4-2 Radiated RF (RS): IEC61000-4-3 EFT: IEC61000-4-4 Surge: IEC61000-4-5 Conducted RF (CS): IEC61000-4-6 Power Frequency Magnetic Field: IEC61000-4-8	Electro Magnetic Compatibility (EMC) Directive 2014/30/EU EN 55032:2015:2020, Class A EN 55035:2017/A11:2020 CISPR 32 ESD: IEC61000-4-2 Radiated RF (RS): IEC61000-4-3 EFT: IEC61000-4-4 Surge: IEC61000-4-5 Conducted RF (CS): IEC61000-4-6 Power Frequency Magnetic Field: IEC61000-4-8
ISED	ICES-003:2020 Issue 7, Class A	ICES-003:2020 Issue 7, Class A	ICES-003:2020 Issue 7, Class A
RCM	AS/NZS CISPR 32, Class A	AS/NZS CISPR 32, Class A	AS/NZS CISPR 32, Class A
VCCI	VCCI-CISPR-32:2016, Class A	VCCI-CISPR-32:2016, Class A	VCCI-CISPR-32:2016, Class A
BSMI	CNS 15936 (2016), Class A, CNS 15598-1 (2020)	CNS 15936 (2016), Class A, CNS 15598-1 (2020)	CNS 15936 (2016), Class A, CNS 15598-1 (2020)
CB	Low Voltage Directive (LVD) 2014/35/EU IEC 62368-1 2nd Edition IEC 62368-1 3rd Edition	Low Voltage Directive (LVD) 2014/35/EU IEC 62368-1 2nd Edition IEC 62368-1 3rd Edition	Low Voltage Directive (LVD) 2014/35/EU IEC 62368-1 2nd Edition IEC 62368-1 3rd Edition
UL/cUL	UL 62368-1 2nd Edition with additional Class I, Division 2, Groups A, B, C, D	UL 62368-1 3rd Edition	UL 62368-1 3rd Edition
Environmental	Cold: IEC 60068-2-1 Dry Heat: IEC 60068-2-2 Vibration: IEC 60068-2-6 Shock: IEC 60068-2-27 Damp Heat: IEC 60068-2-30		Cold: IEC 60068-2-1 Dry Heat: IEC 60068-2-2 Vibration: IEC 60068-2-6 Change of Temperature: IEC 60068-2-14 Shock: IEC 60068-2-27 Damp Heat: IEC 60068-2-78 IEEE 1613: 2009
Railway Applications	EN 50155 EN 50121-1 EN 50121-3-2 EN 50121-4		
ATEX	ATEX 2218X		
Mechanical			
Ingress Protection	IP30	IP40	IP40
Form Factor	DIN-rail	DIN-rail	Rackmount
Dimensions			
Height x Width x Length (inches)	6.06 × 3.8 × 4.15	7.09 × 4.58 × 6.69	1.73 × 17.32 × 16.14
Height x Width x Length (mm)	154 × 96.4 × 105.5	180 × 116.4 × 170	44 × 440 × 410
Weight	2.7 lbs (1230 g)	6.6 lbs (3.0 kg)	13.9 lbs (6293 g)
Warranty			
Fortinet warranty	Limited lifetime* warranty on all models		

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

Ordering Information

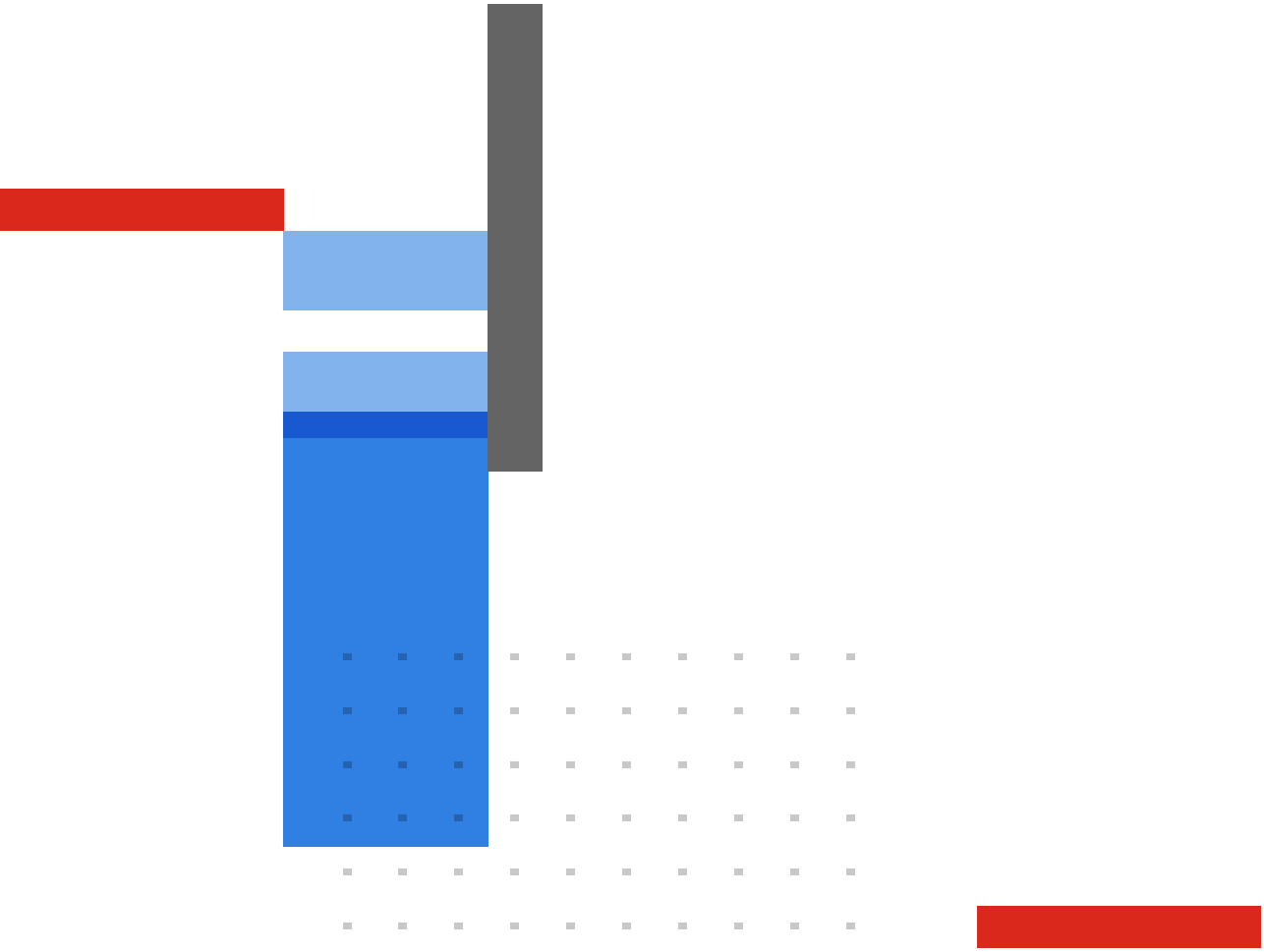
Product	SKU	Description
FortiSwitch Rugged Models		
FortiSwitch Rugged 108F	FSR-108F	Layer 2 ruggedized FortiGate switch controller compatible switch with 6× 1GE/100M/10M RJ45 and 2× 1GE/100M SFP. IP40 rating.
FortiSwitch Rugged 112F-POE	FSR-112F-POE	Layer 2 ruggedized FortiGate switch controller compatible PoE switch with 8× 1GE/100M/10M RJ45 PoE 802.3bt type 4 (90W) with maximum 240W limit, and 4× 1G/100M SFP. IP40 rating.
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 216F-POE	FSR-216F-POE	Ruggedized layer 2/3 FortiGate switch controller compatible PoE switch with 16× 10M/100M/1GE RJ45 PoE 802.3bt type 4 (90W) with maximum 360W limit, and 4× 1G/10GE SFP+. IP40 rating.
FortiSwitch Rugged 424F-POE	FSR-424F-POE	Ruggedized layer 2/3 FortiGate switch controller compatible switch 12× 2.5 GE RJ45, 12× 2.5 GE SFP+, 4× 10 GE SFP+ and 2× 40 GE QSFP+, 12 port PoE UPOE (60W) with maximum 421W limit. IP40 rating.
Licenses		
FortiEdge Cloud Management License	FC-10-FSW10-628-02-DD	FortiSwitch 200-400 Series (incl all FSW Rugged Models) FortiEdge Cloud Management SKU Including FortiCare Premium (Note, FortiCare only applicable when used with FortiEdge Cloud).
FortiSwitchManager Subscription License	FC1-10-SWMVM-258-01-DD	Subscription license for 10 FortiSwitch Units managed by FortiSwitchManager VM. 24×7 FortiCare support (for FSWM VM) included.
	FC2-10-SWMVM-258-01-DD	Subscription license for 100 FortiSwitch Units managed by FortiSwitchManager VM. 24×7 FortiCare support (for FSWM VM) included.
	FC3-10-SWMVM-258-01-DD	Subscription license for 1000 FortiSwitch Units managed by FortiSwitchManager VM. 24×7 FortiCare support (for FSWM VM) included.
FortiSwitch Advanced Features License	FS-SW-LIC-400	SW License for FS-400 Series Switches to activate Advanced Features.
Optional Accessories		
FortiPSU Rugged DIN Rail 240W PSU	SP-RGDIN-240-PS	Pack of 2 units - DIN Rail Rugged PSU 90-264VAC/106V-300VDC Input, 240W/54V Nominal Output, -30°C to 70°C.

For details of Transceiver modules, see the Fortinet Transceivers datasheet.

Visit https://www.fortinet.com/resources/ordering-guides for related ordering guides.

Fortinet Corporate Social Responsibility Policy

Fortinet is committed to driving progress and sustainability for all through cybersecurity, with respect for human rights and ethical business practices, making possible a digital world you can always trust. You represent and warrant to Fortinet that you will not use Fortinet's products and services to engage in, or support in any way, violations or abuses of human rights, including those involving illegal censorship, surveillance, detention, or excessive use of force. Users of Fortinet products are required to comply with the Fortinet EULA and report any suspected violations of the EULA via the procedures outlined in the Fortinet Whistleblower Policy.



FORTINET

www.fortinet.com

May 5, 2025

FSR-DAT-R29-20250505