

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) | FORTISWITCH FORTILINK MODE (WITH FORTIGATE) |
|---|--|
| Management and Configuration | Security and Visibility |
| Auto Discovery of Multiple Switches | Authentication 802.1X (Port-based, MAC-based, MAB) |
| Automated detection and recommendations | Block Intra-VLAN Traffic |
| Centralized VLAN Configuration | Clients Monitoring |
| Dynamic Port Profiles for FortiSwitch ports | Device Detection |
| FortiLink Secure Fabric | DHCP Snooping |
| FortiLink Stacking (Auto Inter-Switch Links) | DHCP/ARP Monitor |
| FortiSwitch Management over VXLAN | FortiGuard IoT identification |
| Health Monitoring | FortiSwitch recommendations in Security Rating |
| IGMP Snooping | Host Quarantine on Switch Port |
| L3 Routing and Services (FortiGate) | Integrated FortiGate Network Access Control (NAC) function |
| Link Aggregation Configuration | MAC Black/White Listing (FortiGate) |
| LLDP/MED | NAC Device Telemetry |
| Managed Switches 8 to 300 depending on FortiGate model | Network Device Detection |
| Policy-Based Routing (FortiGate) | Policy Control of Users and Devices (FortiGate) |
| Provision firmware upon authorization | Port Statistics |
| Software Upgrade of Switches | Security Fabric Automation |
| Spanning Tree | Switch Controller traffic collector |
| Switch POE Control | Syslog Collection |
| Virtual Domain (FortiGate) | UTM Features |
| High Availability | Firewall (FortiGate) |
| Active-Active Split LAG from FortiGate to FortiSwitches for Advanced Redundancy | IPC, AV, Application Control, Botnet (FortiGate) |
| LAG support for FortiLink Connection | |
| Support FortiLink FortiGate in HA Cluster | |



Features

Refer to the FortiSwitch [Feature Matrix](#) 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 Reflectometry (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](#) 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: SNMP
 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 | 6x 1G/100M/10M RJ45 2x 1G/100M SFP | 8x 1G/100M/10M RJ45 4x 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 | 22 W (without PoE) 264 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 Emission standard for industrial environments: EN 61000-6-4 IEC 61850-3 Ed 2.0: 2013 | 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 IEC 61850-3 Ed 2.0: 2013 |
| 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 |
| Environmental | Cold: IEC 60068-2-1 Dry Heat: IEC 60068-2-2 Vibration: IEC 60255-21-1, IEC 60068-2-6 Change of Temperature: IEC 60068-2-14 Shock: IEC 60255-21-2, IEC 60068-2-27 Damp Heat: IEC 60068-2-78 Damp Heat: IEC 60068-2-30 IEEE 1613: 2009 | Cold: IEC 60068-2-1 Dry Heat: IEC 60068-2-2 Vibration: IEC 60255-21-1, IEC 60068-2-6 Change of Temperature: IEC 60068-2-14 Shock: IEC 60255-21-2, IEC 60068-2-27 Damp Heat: IEC 60068-2-78 Damp Heat: IEC 60068-2-30 IEEE 1613: 2010 |
| Railway Applications | EN 50155 EN 50121-1 EN 50121-3-2 EN 50121-4 | EN 50155 EN 50121-1 EN 50121-3-2 EN 50121-5 |
| Mechanical | | |
| Ingress Protection | IP40 | IP40 |
| Form Factor | DIN-rail | DIN-rail |
| Dimensions | | |
| Height x Width x Length (inches) | 4.45 x 2.17 x 5.52 | 5 x 2.62 x 5.91 |
| Height x Width x Length (mm) | 113 x 55 x 140 | 127 x 66.5 x 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-216F-POE | FSR-424F-POE |
|----------------------------------|---|--|
| Hardware Specifications | | |
| Total Network Interfaces | 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 |
| Power over Ethernet (PoE) Ports | 16 (802.3af/at/bt (90W)) | 12 (802.3af/at/4-pair 60W) |
| PoE Power Budget | 360W | 421W |
| System Specifications | | |
| Switching Capacity (Duplex) | 112 Gbps | 360 Gbps |
| Packets per Second (Duplex) | 166 Mpps | 536 Mpps |
| MAC Address Storage | 16k | 32k |
| Network Latency | < 1μs | <1μs |
| VLANs Supported | 4k | 4k |
| Link Aggregation Group Size | 8 | Up to 24 |
| Total Link Aggregation Groups | Up to number of ports | Up to number of ports |
| Queues/Port | - | 8 |
| Packet Buffers | 1.5MB | 4MB |
| DRAM | 1GB DDR4 | 1GB |
| FLASH | 32MB SPI + 1GB NAND | 256MB |
| ACL | 2k | 1.5k |
| Spanning Tree Instances | 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 |
| Input Voltage Range | +/-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 |
| Power Consumption (Maximum) | 25W (without PoE) 396W (with PoE) | 107.1W (without PoE) 528.6W (with PoE) |
| Heat Dissipation | 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) 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 | 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) |
| Humidity | 5% to 95% RH non-condensing | 5% to 95% RH non-condensing |
| Mean Time Between Failures | > 30 years | > 30 years |
| Cooling | Fanless | Fanless |



Specifications



| | 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 |
| 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 |
| Environmental | Vibration: IEC 60068-2-6 Shock: IEC 60068-2-27 | 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 |
| Mechanical | | |
| Ingress Protection | IP40 | IP40 |
| Form Factor | DIN-rail | Rackmount |
| Dimensions | | |
| Height x Width x Length (inches) | 7.09 × 4.58 × 6.69 | 1.73 × 17.32 × 16.14 |
| Height x Width x Length (mm) | 180 × 116.4 × 170 | 44 × 440 × 410 |
| Weight | 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 2x 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 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 | Layer 2/3 ruggedized 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 802.3af/at/4-pair 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. |
| FortiPSU Rugged DIN Rail 480W PSU | SP-RGDIN-480-PS | Pack of 2 units - DIN Rail Rugged PSU 90-264VAC/106V-300VDC Input, 480W/54V Nominal Output, -30°C to 70°C |

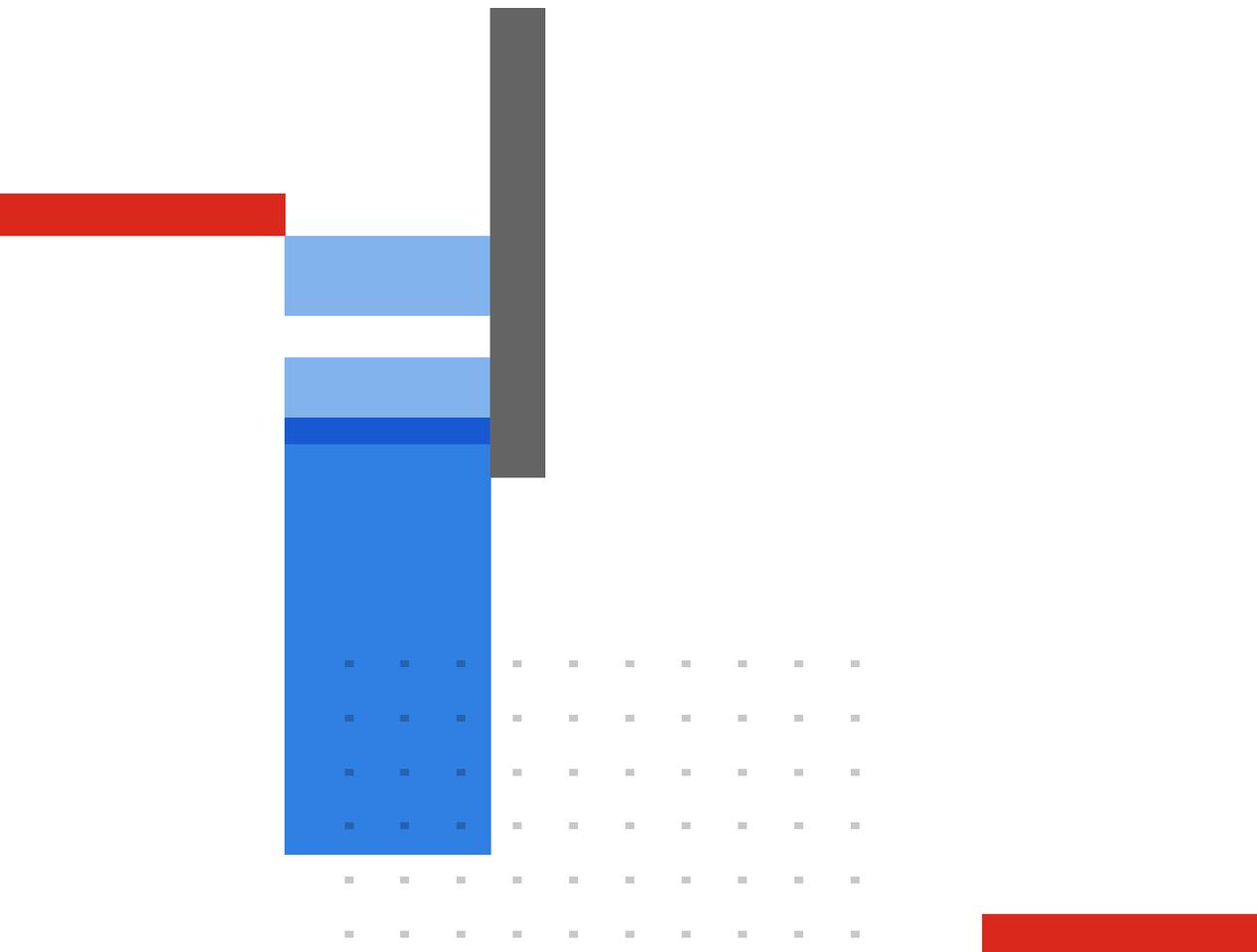
For details of Transceiver modules, see the [Fortinet Transceivers datasheet](#).

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](#).



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