# 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

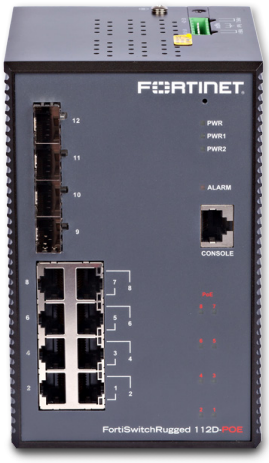
**Multiple Form Factors**. DIN-rail and rack mount options

**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.

# Features

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

| FORTISWITCH FORTILINK MODE (WITH FORTIGATE) |
|---|
| **Security and Visibility** |
| 802.1X Authentication (Port-based, MAC-based, MAB) |
| Syslog Collection |
| DHCP Snooping |
| Device Detection |
| MAC Black/While Listing (FortiGate) |
| Policy Control of Users and Devices (FortiGate) |
| Block Intra-VLAN Traffic |
| Network Device Detection |
| Host Quarantine on Switch Port |
| Integrated FortiGate Network Access Control (NAC) function |
| FortiGuard IoT identification |
| FortiSwitch recommendations in Security Rating |
| Switch Controller traffic collector |
| Port Statistics |
| Clients Monitoring |
| **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** |
| Jumbo Frames |
| Auto-negotiation for Port Speed and Duplex |
| MDI/MDIX Auto-crossover |
| IEEE 802.1D MAC Bridging/STP |
| IEEE 802.1w Rapid Spanning Tree Protocol (RSTP) |
| IEEE 802.1s Multiple Spanning Tree Protocol (MSTP) |
| STP Root Guard |
| STP BPDU Guard |
| Edge Port / Port Fast |
| IEEE 802.1Q VLAN Tagging |
| Private VLAN |
| IEEE 802.3ad Link Aggregation with LACP |
| Unicast/Multicast traffic balance over trunking port (dst-ip, dst-mac, src-dst-ip, src-dst-mac, src-ip, src-mac) |
| IEEE 802.1AX Link Aggregation |
| Spanning Tree Instances (MSTP/CST) |
| IEEE 802.3x Flow Control and Back-pressure |
| IEEE 802.3 10Base-T |
| IEEE 802.3u 100Base-TX |
| IEEE 802.3z 1000Base-SX/LX |
| IEEE 802.3ab 1000Base-T |
| IEEE 802.3ae 10 Gigabit Ethernet |
| IEEE 802.3az Energy Efficient Ethernet |
| IEEE 802.3bz Multi Gigabit Ethernet |
| IEEE 802.3 CSMA/CD Access Method and Physical Layer Specifications |
| Storm Control |
| MAC, IP, Ethertype-based VLANs |
| Virtual-Wire |
| Time-Domain Reflectcometry (TDR) Support |
| LAG min/max bundle |
| Rapid PVST interoperation |
| Ingress Pause Metering |
| Loop Guard |
| Per-port storm control |
| Priority-based Flow Control (802.1Qbb) |
| IEEE 802.1ad QinQ |
| VLAN Mapping |
| IEEE 802.3ba, 802.3bj, and 802.3bm 40 and 100 Gigabit Ethernet |
| Auto topology |
| Dynamically shared packet buffers |
| **Services** |
| IGMP proxy / querier |
| MLD Snooping |
| MLD proxy / querier |
| IGMP Snooping |

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

# Features

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

| FORTISWITCH |
| --- |
| **High Availability** |
| Multi-Chassis Link Aggregation (MCLAG) |
| 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 Default and Power Profiles |
| **Quality of Service** |
| IEEE 802.1p Based Priority Queuing |
| IP TOS/DSCP Based Priority Queuing |
| Explicit Congestion Notification |
| Egress priority tagging |
| Percentage Rate Control |

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

# 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 2362: Protocol Independent Multicast-Sparse Mode (PIM-SM): Protocol Specification |
| RFC 2710: Multicast Listener Discovery (MLD) for IPv6 (MLDv1) |
| 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-112D-POE | FSR-424F-POE |
|---|---|---|
| **Hardware Specifications** | | |
| **Total Network Interfaces** | 8× 10/100 Mbps /1 GE RJ45<br>4× 100Mbps / 1 GE SFP ports | 12× 1/2.5 GE RJ45, 12× 1/2.5 GE SFP<br>4× 10G SFP+, 2× 40G QSFP+ ports |
| **10/100/1000 Service Ports** | - | 1 |
| **RJ-45 Serial Console Port** | 1 | 1 |
| **Power over Ethernet (PoE) Ports** | 8 (802.3af/at) | 12 [802.3af/at/UPOE (60W)] |
| **PoE Power Budget** | 240W | 421W |
| **System Specifications** | | |
| **Switching Capacity (Duplex)** | 24 Gbps | 360 Gbps |
| **Packets per Second (Duplex)** | 46 Mpps | 584 Mpps |
| **MAC Address Storage** | 8k | 32k |
| **Network Latency** | < 2 µs | <1µs |
| **VLANs Supported** | 4k | 4k |
| **Link Aggregation Group Size** | Up to 12 | Up to 24 |
| **Total Link Aggregation Groups** | Up to number of ports | Up to number of ports |
| **Queues/Port** | - | 8 |
| **Packet Buffers** | 1 MB | 4MB |
| **DRAM** | 512 MB | 1GB |
| **FLASH** | 64 MB | 256MB |
| **ACL** | 130 | 1.5k |
| **Spanning Tree Instances** | 16 | 16 |
| **IPv4/IPv6 Hardware-based Routing** | - | Yes |
| **Power** | | |
| **Power Input** | Redundant input terminals | Redundant input terminals |
| **Input Voltage Range** | +/-48V to +/-57V DC to support PoE output<br>+/-50V to +/-57V DC to support PoE+ output<br>+/-12V to +/-57V DC to support non-POE operation | 41 to 125Vdc, 15A max. to support PoE<br>18 to 40Vdc, 6.5A to support non-PoE operation |
| **Reverse Power Protection** | Yes | Yes |
| **Power Consumption (Maximum)** | 10.12W (without PoE)<br>286.43 (with PoE) | 107.1W (without PoE)<br>528.6W (with max PoE budget) |
| **Heat Dissipation** | 822 BTU/h with 8x PoE+ devices<br>68.65 BTU/h without PoE | 1704 with PoE<br>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°C to 70°C<br>Maximum operating temperature with PoE:<br>70°C with 105W PSE<br>60°C with 315W PSE<br>50°C with 420W PSE |
| **Operating Altitude** | 4000m 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-112D-POE | FSR-424F-POE |
|---|---|---|
| **Certification and Compliances** | | |
| **EMI** | FCC, CE, RCM, VCCI, BSMI (Class A) | FCC, CE, RCM, VCCI, BSMI (Class A) |
| **EMS** | CE | CE<br>IEC 61850-3 Ed 2.0:2013 |
| **RoHS and WEEE** | Compliant | Compliant |
| **FCC** | FCC Part 15, Subpart B, Class A | FCC Part 15, Subpart B, Class A |
| **ICES** | Yes | Yes |
| **CE** | Electro Magnetic Compatibility (EMC)<br>Directive 2014/30/EU<br>EN 55032:2015:2020, Class A<br>EN 55035:2017/A11:2020<br>CISPR 32<br>ESD: IEC61000-4-2<br>Radiated RF (RS): IEC61000-4-3<br>EFT: IEC61000-4-4<br>Surge: IEC61000-4-5<br>Conducted RF (CS): IEC61000-4-6<br>Power Frequency Magnetic Field: IEC61000-4-8<br>Emission standard for industrial environments: EN 61000-6-4 | Electro Magnetic Compatibility (EMC)<br>Directive 2014/30/EU<br>EN 55032:2015:2020, Class A<br>EN 55035:2017/A11:2020<br>CISPR 32<br>ESD: IEC61000-4-2<br>Radiated RF (RS): IEC61000-4-3<br>EFT: IEC61000-4-4<br>Surge: IEC61000-4-5<br>Conducted RF (CS): IEC61000-4-6<br>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<br>IEC 62368-1 2nd Edition<br>IEC 62368-1 3rd Edition | Low Voltage Directive (LVD) 2014/35/EU<br>IEC 62368-1 2nd Edition<br>IEC 62368-1 3rd Edition |
| **UL/cUL** | UL 62368-1 2nd Edition<br>with additional Class I, Division 2, Groups A, B, C, D | UL 62368-1 3rd Edition |
| **Environmental** | Cold: IEC 60068-2-1<br>Dry Heat: IEC 60068-2-2<br>Vibration: IEC 60068-2-6<br>Shock: IEC 60068-2-27<br>Damp Heat: IEC 60068-2-30 | Cold: IEC 60068-2-1<br>Dry Heat: IEC 60068-2-2<br>Vibration: IEC 60068-2-6<br>Change of Temperature: IEC 60068-2-14<br>Shock: IEC 60068-2-27<br>Damp Heat: IEC 60068-2-78<br>IEEE 1613: 2009 |
| **Railway Applications** | EN 50155<br>EN 50121-1<br>EN 50121-3-2<br>EN 50121-4 | By request |
| **ATEX** | ATEX 2218X | By request |
| **Mechanical** | | |
| **Ingress Protection** | IP30 | IP40 |
| **Installation Option** | DIN rail mount | rack mount |
| **Dimensions** | | |
| **Length x Width x Height (inches)** | 6.06 × 4.15 × 3.8 | 1.73 × 16.14 × 17.32 |
| **Length x Width x Height (mm)** | 154 × 105.5 96.4 | 44 × 410 × 440 |
| **Weight** | 2.7 lbs (1230 g) | 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

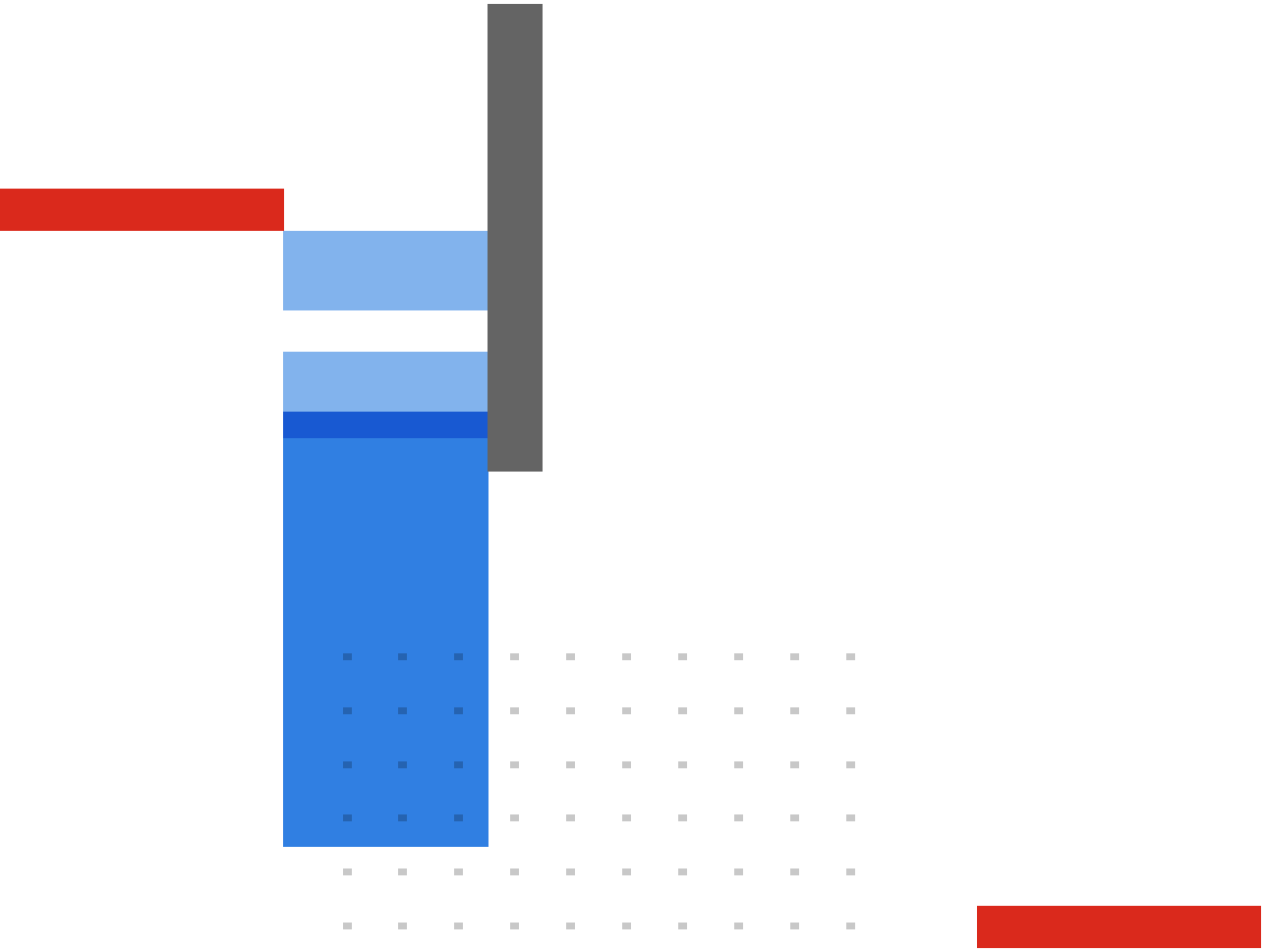
# Ordering Information

| Product | SKU | Description |
|---|---|---|
| **FortiSwitch Rugged Models** | | |
| **FortiSwitch Rugged 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 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** | | |
| **FortiLAN Cloud Management License** | FC-10-FSW10-628-02-DD | FortiSwitch 200 - 400 Series (incl all FSW Rugged Models) FortiLAN Cloud Management SKU Including Forticare 24×7. (Note, FortiCare only applicable when used with FortiLAN 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. |

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

### Fortinet CSR 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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