

DATA SHEET

FortiGate® Rugged Series

Available in:



Appliance

Mission Critical Security Solutions for Harsh Environments



While traditional security solutions are designed and intended for the world of offices and corporations, the FortiGate Rugged Series offers industrially-hardened, all-in-one security appliance that delivers specialized threat protection for securing critical industrial and control networks against malicious attacks.



Ruggedized Design

Fanless and use of robust components ensure reliable operation in harsh industrial environments



Consolidated Security Architecture

FortiGate running FortiOS consolidated security offers better protection and lower cost of ownership than multiple point products. Coupled with FortiGuard Industrial Security Service, it ensures that critical networks receive real-time protection



SD-WAN Capable

Supports reliable connectivity with lower costs via SD-WAN technologies



Ease of Management

Robust management systems that allow rapid provision and deployment, monitoring of device and threat status while providing actionable reports

PRODUCT OFFERINGS

FGR-30D

Ruggedized compact security appliance with DIN mounting kit

FGR-35D

Security appliance with IP67 rating for outdoor environment

FGR-60D

SPU SoC-powered, high performance security and VPN gateway

FGR-60F

New SPU SoC4-powered for rugged and harsh environments

FGR-60F-3G4G

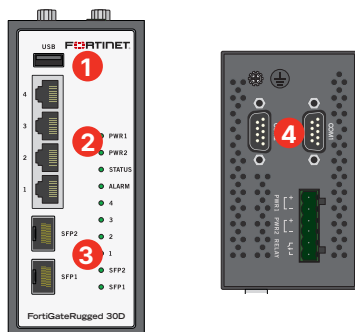
Integrated 3G4G modem for ruggedized and mission-critical applications

FGR-90D

Robust ruggedized security appliance with a wide operating temperature

HARDWARE

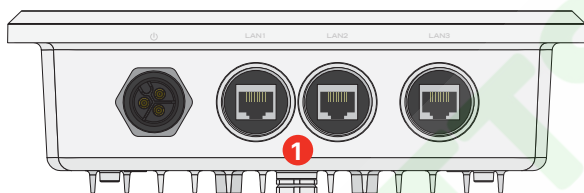
FortiGate Rugged 30D



Interfaces

1. 1x USB Port
2. 4x GE RJ45 Ports
3. 2x GE SFP Slots
4. 2x DB9 Serial Port/Console

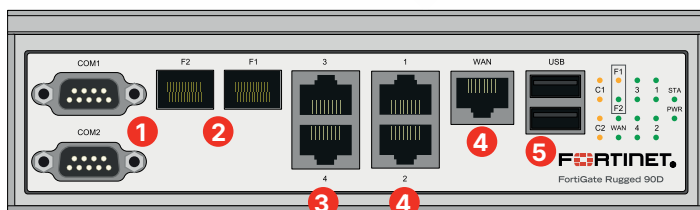
FortiGate Rugged 35D



Interfaces

1. 3x GE RJ45 Ports

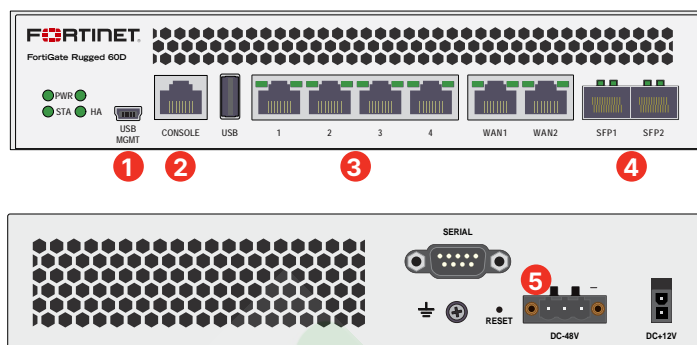
FortiGate Rugged 90D



Interfaces

1. 2x DB9 Serial Interface/Console
2. 2x GE SFP Slots
3. 1x GE RJ45 Bypass Pair
4. 3x GE RJ45 Ports
5. 2x USB interfaces

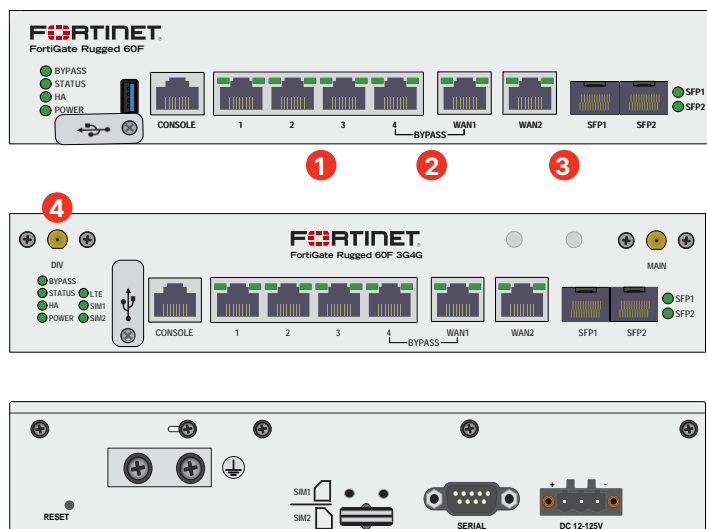
FortiGate Rugged 60D



Interfaces

1. 1x Micro USB Management Port for FortiExplorer
2. 1x Console Port (RJ45)
3. 2x GE RJ45 Ports
4. 2x Shared Media (GE RJ45 Ports / GE SFP Slots) Pairs
5. 1x DB9 Serial Interface

FortiGate Rugged 60F/-3G4G



Interfaces

1. 4x GE RJ45 Ports
2. 1x Bypass GE RJ45 Port Pair (WAN1 & Port4, default setting)*
3. 2x GE RJ45/SFP Shared Media Pairs
4. Integrated 3G4G Modem

*NOTE: WAN1/WAN2 and SFP1/SFP2 are shared interfaces



FORTINET SECURITY FABRIC

Security Fabric

The industry's highest-performing cybersecurity platform, powered by FortiOS, with a rich ecosystem designed to span the extended digital attack surface, delivering fully automated, self-healing network security.

- **Broad:** Coordinated detection and enforcement across the entire digital attack surface and lifecycle with converged networking and security across edges, clouds, endpoints and users
- **Integrated:** Integrated and unified security, operation, and performance across different technologies, location, deployment options, and the richest Ecosystem
- **Automated:** Context aware, self-healing network & security posture leveraging cloud-scale and advanced AI to automatically deliver near-real-time, user-to-application coordinated protection across the Fabric

The Fabric empowers organizations of any size to secure and simplify their hybrid infrastructure on the journey to digital innovation.



FortiOS™ Operating System

FortiOS, Fortinet's leading operating system enable the convergence of high performing networking and security across the Fortinet Security Fabric delivering consistent and context-aware security posture across network endpoint, and clouds. The organically built best of breed capabilities and unified approach allows organizations to run their businesses without compromising performance or protection, supports seamless scalability, and simplifies innovation consumption.

SERVICES



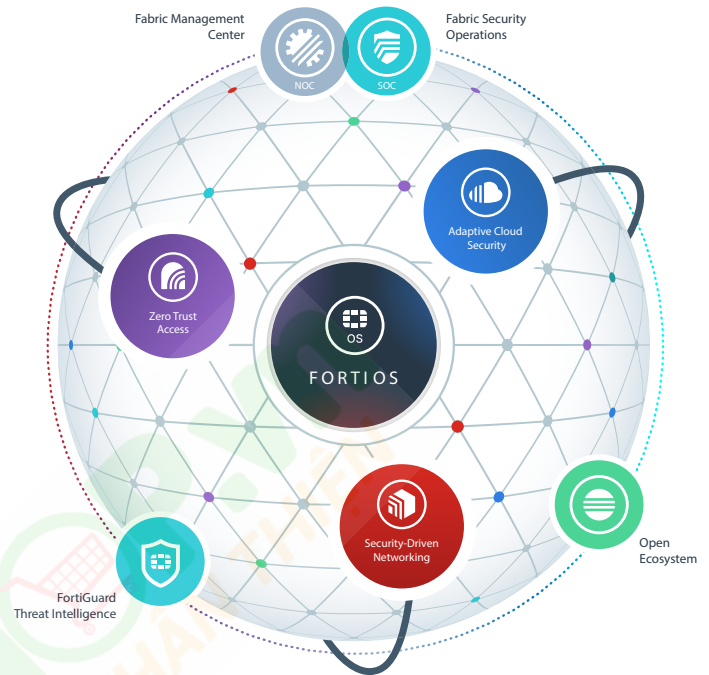
FortiGuard™ Security Services

FortiGuard Labs offers real-time intelligence on the threat landscape, delivering comprehensive security updates across the full range of Fortinet's solutions. Comprised of security threat researchers, engineers, and forensic specialists, the team collaborates with the world's leading threat monitoring organizations and other network and security vendors, as well as law enforcement agencies.



FortiCare™ Services

Fortinet is dedicated to helping our customers succeed, and every year FortiCare services help thousands of organizations get the most from their Fortinet Security Fabric solution. We have more than 1,000 experts to help accelerate technology implementation, provide reliable assistance through advanced support, and offer proactive care to maximize security and performance of Fortinet deployments.



SPECIFICATIONS

	FGR-30D	FGR-35D	FGR-60D	FGR-60F / -3G4G	FGR-90D
Interfaces and Modules					
GE RJ45 Interfaces	4	3	4	4	3
Bypass GE RJ45 Port Pair*	–	–	–	1*	1
GE SFP Slots	2	–	–	–	2
GE RJ45/SFP Shared Media Pairs	–	–	2	2	–
DB9 Serial Interface	2	–	1	1	2
USB (Client / Server)	1	–	1/1	1	1
RJ45 Console Port	–	–	1	1	–
Cellular Modem	–	–	–	3G4G / LTE	–
Transceivers Included	–	–	–	–	–
System Performance and Capacity					
IPv4 Firewall Throughput (1518** / 512 / 64 byte UDP packets)	900 Mbps**	550 Mbps**	1.5 Gbps**	6/6/5.95 Gbps	2 Gbps**
Firewall Latency (64 byte, UDP)	70.00 μs	90.00 μs	4.00 μs	3.10 μs	51.00 μs
Firewall Throughput (Packets Per Second)	87 Kpps	52.5 Kpps	2.2 Mpps	8.9 Mpps	84 Kpps
Concurrent Sessions (TCP)	750,000	750,000	500,000	600,000	2.5 Million
New Sessions/Second (TCP)	5,000	5,000	4,000	19,000	20,000
Firewall Policies	5,000	5,000	5,000	5,000	5,000
IPsec VPN Throughput (512 byte) ¹	45 Mbps	45 Mbps	1 Gbps	3.5 Gbps	84 Mbps
Gateway-to-Gateway IPsec VPN Tunnels	200	200	200	200	200
Client-to-Gateway IPsec VPN Tunnels	250	250	500	500	1,000
SSL-VPN Throughput	25 Mbps	25 Mbps	30 Mbps	400 Mbps	115 Mbps
Concurrent SSL-VPN Users (Recommended Maximum)	80	80	100	100	200
SSL Inspection Throughput (IPS, avg. HTTPS) ³	50 Mbps	55 Mbps	15 Mbps	460 Mbps	85 Mbps
SSL Inspection CPS (IPS, avg. HTTPS) ³	75	75	20	300	70
SSL Inspection Concurrent Session (IPS, avg. HTTPS) ³	45,000	45,000	15,000	70,000	72,000
Application Control Throughput (HTTP 64K)	210 Mbps	230 Mbps	95 Mbps	1.3 Gbps	440 Mbps
Virtual Domains (Default / Maximum)	5 / 5	5 / 5	10 / 10	10 / 10	10 / 10
Maximum Number of FortiAPs (Total / Tunnel)	2 / 2	2 / 2	10 / 5	30 / 10	32 / 16
Maximum Number of FortiTokens	20	20	100	500	100
Maximum Number of FortiSwitches	8	8	8	16	8
High Availability Configurations	Active-Active, Active-Passive, Clustering				
System Performance — Enterprise Traffic Mix					
IPS Throughput ²	180 Mbps	210 Mbps	95 Mbps	950 Mbps	350 Mbps
NGFW Throughput ^{2, 4}	45 Mbps	65 Mbps	40 Mbps	550 Mbps	370 Mbps
Threat Protection Throughput ^{2, 5}	16 Mbps	16 Mbps	23 Mbps	500 Mbps	280 Mbps

*Default bypass pair configuration is WAN1 and Port4

**Measured using 1518 byte UDP packets

Note: All performance values are “up to” and vary depending on system configuration.

1. IPsec VPN performance test uses AES256-SHA256.
2. IPS (Enterprise Mix), Application Control, NGFW and Threat Protection are measured with Logging enabled.
3. SSL Inspection performance values use an average of HTTPS sessions of different cipher suites.
4. NGFW performance is measured with Firewall, IPS and Application Control enabled.
5. Threat Protection performance is measured with Firewall, IPS, Application Control and Malware Protection enabled.



SPECIFICATIONS

	FGR-30D	FGR-35D	FGR-60D	FGR-60F / -3G4G		FGR-90D
Dimensions and Power						
Height x Width x Length (inches)	5.49 × 4.13 × 2.36	3.07 × 10.04 × 10.04	1.73 × 8.50 × 6.10	1.68 × 8.50 × 6.50		2.11 × 7.32 × 6.30
Height x Width x Length (mm)	139.5 × 105 × 60	78 × 255.09 × 255.09	44 × 216 × 155	42.7 × 216 × 165		53.5 × 186 × 160
Weight	1.46 lbs (0.668 kg)	3.986 lbs (1.808 kg)	3.5 lbs (1.6 kg)	3.85 lbs (1.75 kg)		2.4 lbs (1.08 kg)
Form Factor	Desktop/DIN/Wall Mount	Outdoor mountable	Desktop/DIN/Wall Mount	Desktop/DIN/Wall Mount		Desktop/DIN/Wall Mount
IP Rating	IP20	IP67	IP20	IP20		IP40
Power Supply	Dual input, total 6 pin terminal block (12–48V DC), DC cables are not included. 6	Terminal block (12–48V DC) DC cables are not included. 7	–48V DC power supply and external 12V DC power adapter connection. AC adapter not included. DC Power connector supplied only. 8	Terminal block, supports negative (+12V to +125V DC) and positive ground (–12V to –125V DC) sources, cables are not included. 7 See the QuickStart Guide for details.		Dual input, total 6 pin terminal block (12–48V DC) AC adapter included. 9
Power Consumption (Average / Maximum)	15.55 W / 15.92W	10.2 W / 10.5 W	11.6 W / 14 W	15 W / 21 W	17 W / 24W	40 W / 49 W
Maximum Current	1.19A	0.83A	–48V DC / 0.5A	12V DC / 2A		12–48V DC/ 4.08–1.02A
Heat Dissipation	54.29 BTU/h	35.81 BTU/h	40 BTU/h	72 BTU/h	82 BTU/h	167 BTU/h
Operating Environment and Certifications						
Operating Temperature	–40–158°F (–40–70°C)	–40–140°F (–40–60°C)	–4–140°F (–20–60°C)	–40–167°F (–40–75°C)		–40–158°F (–40–70°C)10
Storage Temperature	–58–185°F (–50–85°C)	–58–185°F (–50–85°C)	–40–185°F (–40–85°C)	–40–167°F (–40–75°C)		–40–185°F (–40–85°C)
Humidity	5–95% non-condensing	5–95% non-condensing	20–90% non-condensing	20–90% non-condensing		0–95% non-condensing
Operating Altitude	Up to 7,400 ft (2,250 m)	Up to 7,400 ft (2,250 m)	Up to 7,400 ft (2,250 m)	Up to 7,400 ft (2,250 m)		Up to 7,400 ft (2,250 m)
Compliance	FCC Part 15 Class A, RCM VCCI Class B, CE, UL/ cUL, CB	FCC Part 15 Class A, RCM, VCCI Class A, CE, UL/ cUL, CB	FCC Part 15 Class A, RCM, CE, UL/cUL, CB	FCC Part 15 Class A, RCM, VCCI Class A, CE, UL/ cUL, CB		FCC Part 15 Class A, RCM, VCCI Class A, CE, UL/ cUL, CB
Industry Certifications						
	61850-3 and IEEE 1613 Emission Compliant	IEC 61850-3 and IEEE 1613 Emission Compliant	—	IEC 61850-3 and IEEE 1613 Certified		IEC 61850-3 and IEEE 1613 Emission Compliant
Regional Compatibility				FGR-60F-3G4G		
Maximum Tx Power				20 dBm		
Regions				All Regions		
Modem Model				Sierra Wireless EM7565 (2 SIM Slots, Active/ Passive)		
LTE				B1, B2, B3, B4, B5, B7, B8, B9, B12, B13, B18, B19, B20, B26, B28, B29, B30, B32, B41, B42, B43, B46, B48, B66		
UMTS/HSPA+				B1, B2, B3, B4, B5, B6, B8, B9, B29		
WCDMA				—		
CDMA 1xRTT/EV-DO Rev A				—		
GSM/GPRS/EDGE				—		
Module Certifications				FCC, ICES, CE, RCM, VCCI, BSMI, UL/cUL, CB		
Diversity				Yes		
MIMO				Yes		
GNSS Bias				Yes		

6. AC adapter not supported.
7. AC adapter not supported. Requires fabricated DC cables (refer to QuickStart Guide).
8. Requires third-party AC adapter or DC cables. If wide temperature range is not required, SP-FG60C-PDC (0–40°C) may be acquired separately.
9. Additional AC adapter for dual redundant input is currently not available for order.
10. Excludes supplied power adapter which operates at smaller temperature range.



SUPPORTED PROTOCOLS

IPS and Application Control Support for Operational Technology / Industrial Control System

- | | |
|--------------------------------------|--|
| ▪ ADDP | ▪ IEC 62056 (DLMS/COSEM) |
| ▪ BACnet | ▪ IEEE 1278.2 Distributed Interactive Simulation |
| ▪ CC-Link | ▪ IEEE C37.118 Synchrophasor |
| ▪ CIP | ▪ KNXnet/IP (EIBnet/IP) |
| ▪ CN/IP (EIA/CEA-852) | ▪ LonTalk/EIA-709.1 |
| ▪ CoAP | ▪ Modbus TCP |
| ▪ DICOM | ▪ MOXA |
| ▪ DNP3 | ▪ MQTT |
| ▪ ECHONET Lite | ▪ MTConnect |
| ▪ ELCOM 90 | ▪ Niagara Fox |
| ▪ Ether-S-Bus | ▪ OPC Classic (DA, HDA, AE) |
| ▪ EtherCAT Automation Protocol (EAP) | ▪ OPC UA |
| ▪ Ethernet Global Data (EGD) | ▪ OpenADR |
| ▪ EtherNet/IP | ▪ PROFINET |
| ▪ FL-net | ▪ RTPS |
| ▪ HART-IP | ▪ SafetyNet p |
| ▪ HL7 | ▪ Siemens S7, S7Plus, LOGO |
| ▪ IEC 60870-5-104 | ▪ STANAG 4406 |
| ▪ IEC 60870-6 (TASE.2/ICCP) | ▪ STANAG 5066 |
| ▪ IEC 61850 MMS | ▪ TriStation |
| ▪ IEC 61850 R-GOOSE | ▪ Vedeer-Root |
| ▪ IEC 61850 R-SV | |



FortiGate Rugged 30D



FortiGate Rugged 35D

Trusted Platform Module (FG-60F-3G4G)

The FortiGate Rugged 60F-3G4G device features a dedicated module that hardens physical networking appliances by generating, storing, and authenticating cryptographic keys. Hardware-based security mechanisms protect against malicious software and phishing attacks.



FortiGate Rugged 60F-3G4G



FortiGate Rugged 60D



FortiGate Rugged 60F



FortiGate Rugged 90D

ORDERING INFORMATION

Product	SKU	Description
FortiGate Rugged 30D	FGR-30D	Ruggedized, 4x GE RJ45 ports, 2x GE SFP slots, 2x DB9 Serial. Maximum managed FortiAPs (Total / Tunnel) 2 / 2.
FortiGate Rugged 35D	FGR-35D	Ruggedized, IP67 rating for outdoor environment, 3x GE RJ45 Switch ports. Maximum managed FortiAPs (Total / Tunnel) 2 / 2.
FortiGate Rugged 60D	FGR-60D	Ruggedized, 4x GE RJ45 Switch ports, 2x Shared Media pairs (Including 2x GE RJ45 ports, 2x SFP slots). DB9 Serial. Maximum managed FortiAPs (Total / Tunnel) 10 / 5.
FortiGate Rugged 60F	FGR-60F	Ruggedized, 4x GE RJ45 Switch ports, 2x Shared Media pairs (Including 2x GE RJ45 ports, 2x SFP slots). 1x RJ45 by-pass can be set up between WAN1 and PORT4. DB9 Serial.
FortiGate Rugged 60F-3G4G	FGR-60F-3G4G	Ruggedized, 4x GE RJ45 Switch ports, 2x Shared Media pairs (Including 2x GE RJ45 ports, 2x SFP slots). 1x RJ45 by-pass can be set up between WAN1 and PORT4. DB9 Serial, embedded 3G/4G/LTE wireless wan module.
FortiGate Rugged 90D	FGR-90D	Ruggedized, 3x GE RJ45 ports, 1x GE RJ45 bypass pair, 2x SFP slots. 2x DB9 Serial/console. Dual power input. Maximum managed FortiAPs (Total / Tunnel) 32 / 16.
Optional Accessories		
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 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 transceivers, 90km range, -40~85°C operation	FR-TRAN-ZX	1 GE SFP transceivers, -40~85°C operation, 90km range for all systems with SFP slots.

BUNDLES



FortiGuard Bundle

FortiGuard Labs delivers a number of security intelligence services to augment the FortiGate firewall platform. You can easily optimize the protection capabilities of your FortiGate with one of these FortiGuard Bundles.

Bundles	360 Protection	Enterprise Protection	Unified Threat Protection	Advanced Threat Protection
FortiCare	ASE ¹	24x7	24x7	24x7
FortiGuard App Control Service	•	•	•	•
FortiGuard IPS Service	•	•	•	•
FortiGuard Advanced Malware Protection (AMP) — Antivirus, Mobile Malware, Botnet, CDR, Virus Outbreak Protection and FortiSandbox Cloud Service	•	•	•	•
FortiGuard Web and Video ² Filtering Service	•	•	•	
FortiGuard Antispam Service	•	•	•	
FortiGuard Security Rating Service	•	•		
FortiGuard IoT Detection Service	•	•		
FortiGuard Industrial Service	•	•		
FortiConverter Service	•	•		
SD-WAN Cloud Assisted Monitoring	•			
SD-WAN Overlay Controller VPN Service	•			
Fortinet SOCaaS	•			
FortiAnalyzer Cloud	•			
FortiManager Cloud	•			

1. 24x7 plus Advanced Services Ticket Handling 2. Available when running FortiOS 7.0

FORTINET®

www.fortinet.com

Copyright © 2021 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 and other results 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.