



FortiGate® Rugged 90D

Integrated Security for Industrial Control Systems



FortiGate Rugged 90D

Industrial control systems face an increasing number of targeted attacks and are especially vulnerable to attacks with the potential to cause wide scale outages. Unlikely traditional security solutions are intended for an office environment, the FortiGate Rugged 90D is an industrially hardened, all-in-one security appliance that delivers specialized threat protection for securing critical control industrial networks against malicious attacks.

Ruggedized Protection for Harsh Environments

FortiGate Rugged 90D meets required performance and reliability standards for operating in the demanding substation setting. It is designed to operate reliably in harsh electrical and environmental conditions, including high levels of electrical and radio-frequency interference and wide ambient temperature ranges.

Industrial Network Security

FortiOS running on the ruggedized platform provides industrial network specific protections using security technologies such as Antivirus and IPS while FortiGuard update services and its team of threat experts delivers real-time protections to identify latest malicious activities with no administrator intervention.

Highlights

Firewall Performance	IPS Performance	Interfaces
2 Gbps	1.1 Gbps	Multiple GE SFP and GE RJ45, GE RJ45 bypass port pair and DB9 Serial

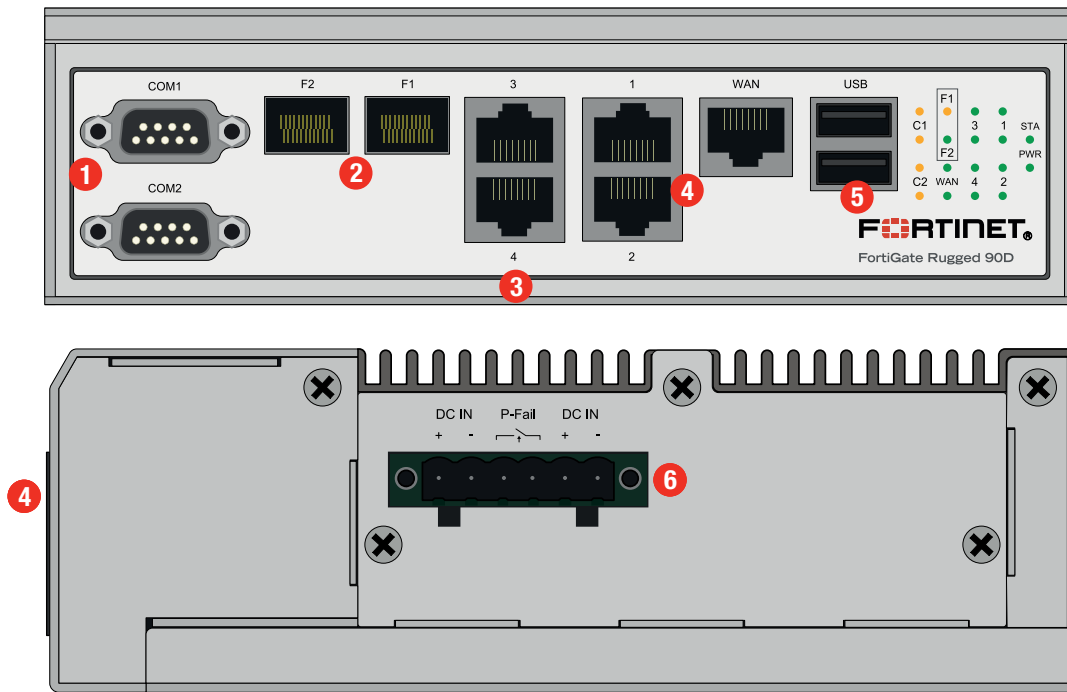
Features & Benefits

- Ruggedized design — fanless and use of robust components ensure reliable operation in harsh industrial environments.
- Consolidated security architecture — FortiGate consolidated security offers better protection and lower cost of ownership than multiple point products.
- Ease of management — robust management systems that allow rapid provision and deployment, monitoring of device and threat status while providing actionable reports.



HARDWARE

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
- 6. DIN-Rail Mount

Compact and Ruggedized

- Fanless design with corrugated aluminum
- Wide temperature range (-40–75°C)
- Support DIN-rail mount and wall mount

Wireless and 3G/4G WAN Extensions

The FortiGate supports external 3G/4G modems that allow additional or redundant WAN connectivity for maximum reliability. The FortiGate can also operate as a wireless access point controller to further extend wireless capabilities.

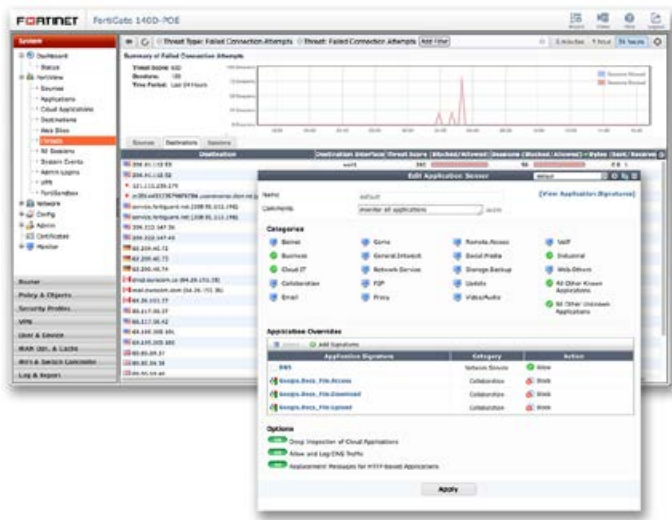
Serial Interface for Legacy Connectivity

The FortiGateRugged 90D comes equipped with a DB9 serial port interface that is commonly used along with the DNP3 protocol in many legacy industrial systems.

Compact, Ruggedized and Reliable Form Factor

Designed for confined spaces and harsh environments, the ruggedized FortiGate can be mounted within an enclosure, on a wall or on a DIN rail. It is small and lightweight yet highly reliable with superior Mean Time Between Failure (MTBF), minimizing the chance of a network disruption. The hardware components used meet high standards in both EMI and vibration tolerance with a wide thermal operating range supported.

SOFTWARE



FortiOS Management UI — FortiView and Application Control Panel

FortiOS

FortiOS helps you protect your organization against advanced threats, configure and deploy your network security faster and see deep into what's happening inside your network. It enables organization to set up policies specific to types of devices, users and applications with industry-leading security capabilities. FortiOS leverages custom FortiASICs and the Optimum Path Processing architecture of FortiGate to deliver 5 times faster throughput performance. In essence, FortiOS delivers:

- **Comprehensive Security** — Control thousands of applications and stop more threats with NSS Labs Recommended IPS, sandboxing, VB100 certified antimalware and more.
- **Superior Control and Visibility** — Stay in control with rich visibility over network traffic, granular policy control, and intuitive, scalable security and network management.
- **Robust Networking Capabilities** — Optimize your network with extensive switching and routing, high availability, WAN optimization, embedded WiFi controller, and a range of virtual options.



For more information, please refer to the FortiOS data sheet available at www.fortinet.com

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, other network and security vendors, as well as law enforcement agencies:

- **Real-time Updates** — 24x7x365 Global Operations research security intelligence, distributed via Fortinet Distributed Network to all Fortinet platforms.
- **Security Research** — FortiGuard Labs have discovered over 170 unique zero-day vulnerabilities to date, totaling millions of automated signature updates monthly.
- **Validated Security Intelligence** — Based on FortiGuard intelligence, Fortinet's network security platform is tested and validated by the world's leading third-party testing labs and customers globally.



For more information, please refer to <http://forti.net/guard>

FortiCare™ Support Services

Our FortiCare customer support team provides global technical support for all Fortinet products. With support staff in the Americas, Europe, Middle East and Asia, FortiCare offers services to meet the needs of enterprises of all sizes:

- **Enhanced Support** — For customers who need support during local business hours only.
- **Comprehensive Support** — For customers who need around-the-clock mission critical support, including advanced exchange hardware replacement.
- **Premium Services** — For global or regional customers who need an assigned Technical Account Manager, enhanced service level agreements, extended software support, priority escalation, on-site visits and more.
- **Professional Services** — For customers with more complex security implementations that require architecture and design services, implementation and deployment services, operational services and more.



For more information, please refer to <http://forti.net/care>

SPECIFICATIONS

FGR-90D	
Interfaces and Modules	
GE RJ45 Interfaces	3
GE RJ45 Bypass Pair	1
GE SFP Slots	2
DB9 Serial Interface/Console	2
USB	2
Included Transceivers	None
System Performance and Capacity	
IPv4 Firewall Throughput	2 Gbps
Firewall Latency (64 byte, UDP)	51 µs
Concurrent Sessions (TCP)	2.5 Million
New Sessions/Sec (TCP)	20,000
Firewall Policies	5,000
IPsec VPN Throughput (512 byte)	84 Mbps
Gateway-to-Gateway IPsec VPN Tunnels	200
Client-to-Gateway IPsec VPN Tunnels	1,000
SSL-VPN Throughput	115 Mbps
Concurrent SSL-VPN Users (Recommended Maximum)	200
IPS Throughput	1.1 Gbps
Antivirus Throughput	270 Mbps
Virtual Domains (Default / Maximum)	10 / 10
Maximum Number of FortiAPs (Total / Tunnel)	32 / 16
Maximum Number of FortiTokens	100
Maximum Number of Registered Endpoints	200
High Availability Configurations	Active-Active, Active-Passive, Clustering
Dimensions and Power	
Height x Width x Length (inches)	2.11 x 7.32 x 6.30
Height x Width x Length (mm)	53.5 x 186 x 160
Weight	2.4 lbs (1.08 kg)
Form Factor	Desktop
Power Consumption (Average / Maximum)	40 W / 49 W
Current (Maximum)	12–48V DC/ 4.08–1.02A
Heat Dissipation	167 BTU/hr
Redundant Power Supplies	Dual (redundant) power input

FGR-90D	
Operating Environment and Certifications	
Operating Temperature	-40–167°F (-40–75°C)
Storage Temperature	-40–185°F (-40–85°C)
Humidity	0–95% non-condensing
Operating Altitude	Up to 7,400 ft (2,250 m)
Compliance	FCC Part 15 Class A, C-Tick, VCCI, CE, UL/cUL, CB
IP Rating	4.0
Certifications	IEC 61850-3 (EMC) and IEEE 1613 Emission Compliant ICSA Labs: Firewall, IPsec, IPS, Antivirus, SSL-VPN
IPS and Application Control Signatures Support List	
Vendors/Applications	7T Technologies/Schneider Electric, ABB, Advantech, Avahi, Broadwin, CoDeSys, Cogent, Control Automation, Datac, GE, Iconics, InduSoft, Intellicom, Measuresoft, Microsys, MOXA, PcVue, Progea, Promotic, RealFlex, Rockwell Automation, RSLogix, Siemens, Sunway, TeeChart, TwinCAT, WellinTech, xArrow
Protocols	BACnet, DNP3, ELCOM7, EtherCAT, EtherIP, ICCP, IEC.60870.5.104, IEC.61850, Modbus, OPC, PROFINET

Note: All performance values are "up to" and vary depending on system configuration. Antivirus performance is measured using 44 Kbyte HTTP files. IPS performance is measured using 1 Mbyte HTTP files. IPsec VPN performance is based on 512 byte UDP packets using AES-256+SHA1. Firewall Throughput performance is measured using UDP 1518 Bytes based on RFC 2544. Antivirus Throughput is measured in proxy mode.

For complete, up-to-date and detailed feature set, please refer to the Administration Handbook and FortiOS Datasheet

ORDER INFORMATION

Product	SKU	Description
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.
Product		
1 GE SFP LX Transceiver Module	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 Transceiver Module	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 Transceiver Module	FR-TRAN-ZX	1 G SFP transceivers, -40–85°C operation, 90km range for all systems with SFP slots.



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