Unidirectional Security Gateway
WF-500

Waterfall's flagship Unidirectional Security Gateway WF-500 replaces firewalls in industrial network environments, providing absolute protection to control systems and industrial control networks from attacks emanating from external less-trusted networks.

Unidirectional Gateways contain both hardware and software components, and ensure data flow in one direction only, from the ICS network to the IT network, providing 100% protection from remote cyber threats.

**Combination of Hardware & Software**

- **TX Host**: gathers data from industrial servers and devices in the ICS network.
- **TX Module**: a transmitter only containing a fiber-optic laser.
- **Fiber optic cable**: connects TX module to RX module, permitting data flow in one direction only and preventing data from entering back into the protected network.
- **RX Module**: an optical receiver only.
- **RX Host**: replicates & emulates a wide array of industrial servers, devices, protocols and other systems on the IT network.

**Features & Benefits**

- Hardware is modular, flexible and user-serviceable
- 1Gbps standard throughput, multi-Gbps with several TX/RX pairs
- Optional HA configuration (high-availability)
- Front panel cabinet connections for clear system visibility
- Wide variety of COTS software connectors, no customization fees
- Flexible connector hosting supporting all major OS

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# Technical Specifications

**100+ COTS Connectors**

Waterfall connectors can run on customer supplied servers, virtual machines or Waterfall Host Modules. Waterfall connectors are supported on Windows, Linux, Solaris, AIX, VxWorks & other operating systems.

**Historians & Databases**
- Osisoft: PI System, PI Asset Framework, PI Backfill
- GE: iHistorian, iHistorian Backfill, OSM
- Schneider-Electric: Wonderware eDNA, Wonderware Historian, Wonderware Historian Backfill, SCADA Expert ClearSCADA
- AspenTech IP.21, Rockwell FactoryTalk Historian, Honeywell Alarm Manager, Scientech R*Time, Bently Nevada System1
- Microsoft SQL Server, Oracle MySQL, PostgreSQL

**Remote Access**
- Remote Screen View

**Enterprise Monitoring**
- FireEye: Helix & Managed Defense
- Email/SMTP, SNMP, Syslog
- HP ArcSight, Splunk, IBM QRadar, McAfee ESM, CyberX, Radiflow iSID, ForeScout Silent Defence, Dragos, Indegy,
- MSMQ, IBM MQ, Active Message Queue, TIBCO,
- SolarWinds Orion, Thales Aramis, IOSight, Panorama

**Industrial Applications & Protocols**
- Siemens S7 & PCS7 Historian
- OPC DA, A&E, HDA, HDA Backfill and OPC UA
- Emerson: EDS,
- Yokogawa OPC, GE iFix
- Modbus, DNP3, ICCP, IEC 60870-5-104, Omni Flow

**File Transfer**
- Folder mirroring, Local Folders
- FTP/S, SFTP, TFTP, SMB, CIFS, NFS, HTTPFS
- Log Mirroring, HTTP Request

**Other Connectors**
- TimeSync, Netflow
- Video & audio streaming
- Kaspersky, Norton, FortiGate, Check Point McAfee and OPSWAT Anti-virus updates
- WSUS and Linux Repository updates
- Tenable Nessus Network Monitor, Nessus Security Center Updates
- Remote printing

**Components**

<table>
<thead>
<tr>
<th></th>
<th>WF-500 TX</th>
<th>WF-500 RX</th>
<th>WF-500 HOST</th>
<th>FLIP</th>
<th>SECURE BYPASS</th>
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<tbody>
<tr>
<td>Copper Network Intf</td>
<td>2</td>
<td>2</td>
<td>3</td>
<td>5</td>
<td>4</td>
</tr>
<tr>
<td>Fiber Network Intf</td>
<td>1</td>
<td>1</td>
<td>n/a</td>
<td>n/a</td>
<td>n/a</td>
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<tr>
<td>Network Intf</td>
<td>1000 Mbps</td>
<td>1000 Mbps</td>
<td>100 / 1000 Mbps</td>
<td>1000 Mbps</td>
<td>100 / 1000 Mbps</td>
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<tr>
<td>Dimensions</td>
<td>18.6 x 4 x 26.5 cm</td>
<td>18.6 x 4 x 26.5 cm</td>
<td>18.6 x 4 x 26.5 cm</td>
<td>41.8 X 4 X 26.5 cm</td>
<td>18.6 x 4 x 26.5 cm</td>
</tr>
<tr>
<td>Weight</td>
<td>0.8 kg</td>
<td>0.8 kg</td>
<td>1.2 kg</td>
<td>1.8 kg</td>
<td>0.8 kg</td>
</tr>
<tr>
<td>Optional Serial Port</td>
<td>n/a</td>
<td>n/a</td>
<td>n/a</td>
<td>1</td>
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**Form Factors**

<table>
<thead>
<tr>
<th></th>
<th>WF-500 STANDARD</th>
<th>WF-500 COMPACT</th>
<th>WF-500 DIN RAIL</th>
</tr>
</thead>
<tbody>
<tr>
<td>Modular Capacity</td>
<td>2</td>
<td>4</td>
<td>n/a</td>
</tr>
<tr>
<td>Power Supply</td>
<td>2 per side (4)</td>
<td>2 per side (4)</td>
<td>2 per system</td>
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<tr>
<td>Dimensions</td>
<td>48.3 x 4.4 x 52 cm</td>
<td>48.3 x 4.4 x 76 cm</td>
<td>11.3 X 21.3 X 25 cm</td>
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<tr>
<td>Weight</td>
<td>2.5 kg</td>
<td>4 kg</td>
<td>3 kg</td>
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