



Business Value

The Triconex Tofino Firewall is the first true OPC (OLE for Process Control) Classic security solution designed with the needs and skills of the control technician in mind. It offers superior security over conventional firewall or tunneler solutions and it is designed to automatically interpret standard TriStation data right out of the box. Combined with the Tricon Communications Module (TCM), the Triconex Tofino Firewall creates the ideal defense-in depth solution for better safety integrated system reliability and security.

Triconex Tofino Firewall

Your Tricon controller is critical to the continued safe operation of your plant. But the growing complexity and connectivity of modern DCS control systems, as well as their reliance on off-the-shelf PC and networking technology, bring with them the potential to disrupt the operation of the safety system due to excessive or improper network traffic. A multi-layered Defense in Depth strategy is necessary to isolate your Tricon from computer viruses, network device failures and human error.

The Triconex Tofino Firewall protects the Tricon Communications Module (TCM) from potential disruption due to abnormal or excessive network traffic. It permits only the specific types and rates of network communications that are required for correct system operation, and prevents all other types of network traffic from reaching the TCM. This provides an additional layer of protection to your Safety Instrumented System, further enhancing the overall safety and reliability of your facility. Any security events, e.g., blocked network traffic, detected by the Triconex Tofino Firewall are logged internally on the device and saved for later review by operations or security personnel.

Many control systems use Microsoft's OPC (OLE for Process Control) technology. The Triconex Tofino Firewall protects the Tricon OPC server by tracking the OPC client data requests and dynamically opening only the minimum required ports in the Triconex Tofino Firewall to permit these data connections to pass through. All other unnecessary ports are blocked, resulting in significantly enhanced security for the Tricon OPC server.

The Triconex Tofino Firewall is easy to install. Simply apply DC power and connect the device in-line in the network connection to the Triconex communications Module. The Triconex Tofino Firewall is pre-configured to work in most installations without changes. If the TCM has been configured to use non-standard network ports, then the Triconex Tofino Firewall's configuration may be easily modified to match the TCM configuration using the Triconex Tofino Firewall Configuration Utility.



Figure 1: Triconex Tofino Firewall

FEATURES

- Triconex Tofino Firewall permits only those types of network traffic required for correct system operation. All other unnecessary traffic is blocked.
- Tracks OPC (OLE for Process Control) client requests to Tricon 4353 OPC server and dynamically opens only the minimum required TCP ports in the Triconex Tofino Firewall for data connections.
- All traffic that is permitted through the Triconex Tofino Firewall is rate-limited to prevent overload of the Tricon Communications Module.
- All security events, including blocked network traffic, are logged on the appliance for subsequent analysis.
- Security event logs may be offloaded via USB storage device.
- Pre-configured – no configuration required for most Tricon installations.
- 10/100BaseT network interfaces – direct connection to TCM models 4351A, 4351B, and 4353.
- Plug and play installation – no changes required to external equipment, network design or network IP addresses.

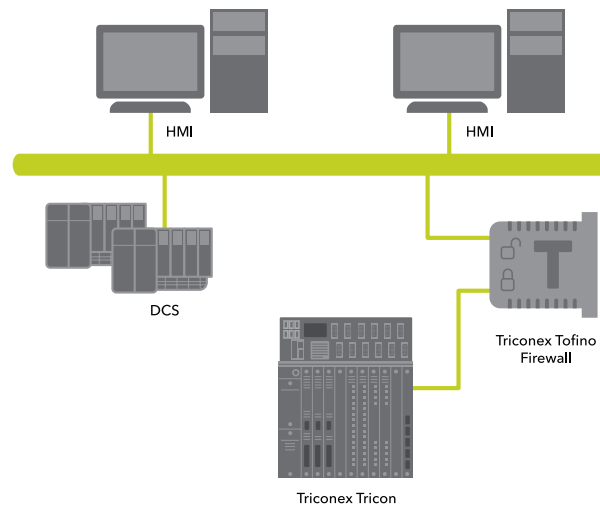


Figure 2: Triconex Tofino Firewall protecting the Tricon

SPECIFICATIONS

Network Interfaces

- Two 10/100 Base T Ethernet twisted-pair interfaces – “Trusted” (closed padlock symbol) and “Untrusted” (open padlock symbol).
- “Trusted” network interface connects to 10/100BaseT interface on Tricon 4351A, 4351B and 4353 Communications Module.
- “Untrusted” network interface connects to external control interface.
- Network link speed and duplex auto-negotiated with link partner.
- Auto-MDX adapts to straight-through or cross-over connections.

Permitted network traffic

- Tricon protocols: TSAA, TriStation, TMI, Downloader, Control (Time Sync), Peer-to-Peer
- Modbus TCP (master and slave)
- Simple Network Time Protocol (SNTP) (Tricon client, external server)
- Network printer access (Tricon client to external print server)
- OPC (bidirectional)
- ICMP ‘ping’ (echo request) - incoming only
- Address Resolution Protocol (ARP)
- Incoming traffic rate limit: 5,000 packets per second
- Port numbers are adjustable via Triconex Tofino Firewall Configuration Utility to match any custom TCM configuration

Power

- 9-32VDC; 24VDC nominal
- 170mA typical, 350mA max. at 24VDC
- Dual redundant power inputs; 24-12AWG screw cage terminals
- Dual power-fail indicator digital inputs (security event log entry generated on state change)

EMI Radiation and Immunity

- EN 55022 Class A
- EN 61000-4-2, EN 61000-4-3

Environmental

- Operating temperature: -40°C to +70°C
- Storage temperature: -40°C to +85°C
- Relative humidity: 10%-90% (non-condensing)

Vibration and Shock

- IEC 60068-2-6: 1g @ 20-500Hz
- IEC 60068-2-27: 30g for 11ms shock
- EN 61326: EMC Annex A
- EN 61010-1

Mechanical

- Protection Class: IP20
- Mounting: 35mm DIN rail
- Dimensions (mm): 42W x 146H x 138D
- Weight: 290g

Certifications

- Class I, Div 2 hazardous environments
- CE mark (EMC compatibility)
- MUSIC 2009-1 security certification (Foundation level)
- Certified Modbus compliant by Modbus-IDA

NOTES

Each Triconex Tofino Firewall provides protection for a single 10/100BaseT network interface. One Triconex Tofino Firewall is required for each TCM network interface to be protected.



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Invensys • 5601 Granite Parkway III, #1000, Plano, TX 75024 • Tel: (469) 365-6400 • Fax: (469) 365-6401 • iom.invensys.com

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