

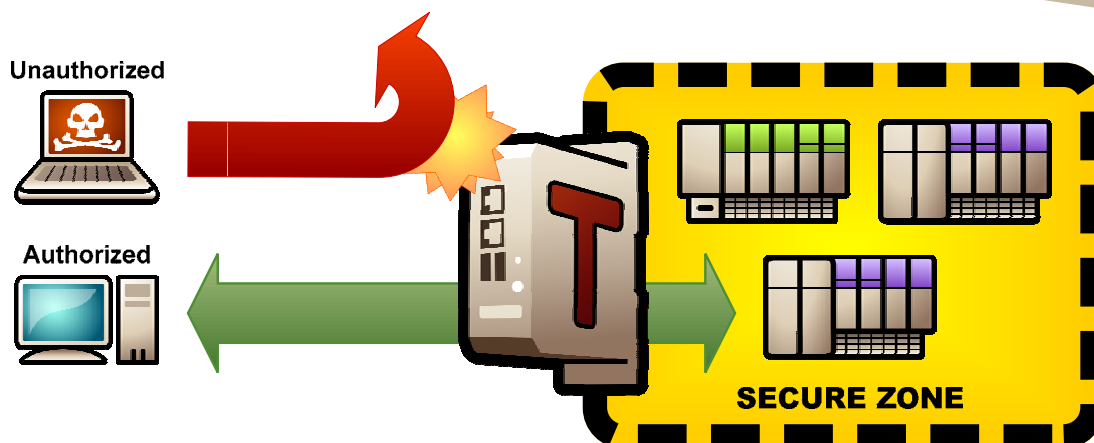
Tofino™ Two Port Security Appliance

Data Sheet

MM-DS-9211-ET

Version 3

Zone Level Security™ for your control network



Tofino Security Appliance

Protect your control system against network problems and cyber threats

The electrical, environmental and operational requirements of SCADA and control systems make IT-focused security solutions unsuitable for use in industrial networks. As a result, the vast majority of these systems are operating with little or no protection against accidental or malicious cyber attacks. Even a single infected USB key can shut down an entire plant.

The Tofino Security Appliance (*Tofino*) provides leading-edge Zone Level Security™ - tailored protection for groups of PLCs, DCSs, RTUs and HMIs, as recommended in ANSI/ISA-99 Standards. Tofino is installed and implemented in a live network with no special training, no pre-configuration, and most importantly, with no system downtime.

Tofino is designed from the ground up with the rugged environment, staff skills and needs of industry in mind, and it protects better and is easier to install than IT firewalls and other security products.

Saves you money through:

- Reduced down time and production losses
- Lower maintenance costs
- Improved system reliability and stability
- Simplified regulatory and security standards compliance

Features

- Simple installation requires no networking knowledge and no pre-configuration
- Install, configure and even update *Tofino* with no disruption to the control system
- Simple configuration over the network using the Tofino Central Management Platform (CMP) software
- Unique 'Test' mode allows testing with no risk to your plant
- Compatible with all DCS, PLC, SCADA, networking and software products
- Rugged hardware design for years of reliable service
- Class I, Div 2 certification for hazardous environments

Applications

- Segment networks into security zones
- Create encrypted 'tunnels' to remote sites
- Protect connections to partner networks and wireless networks

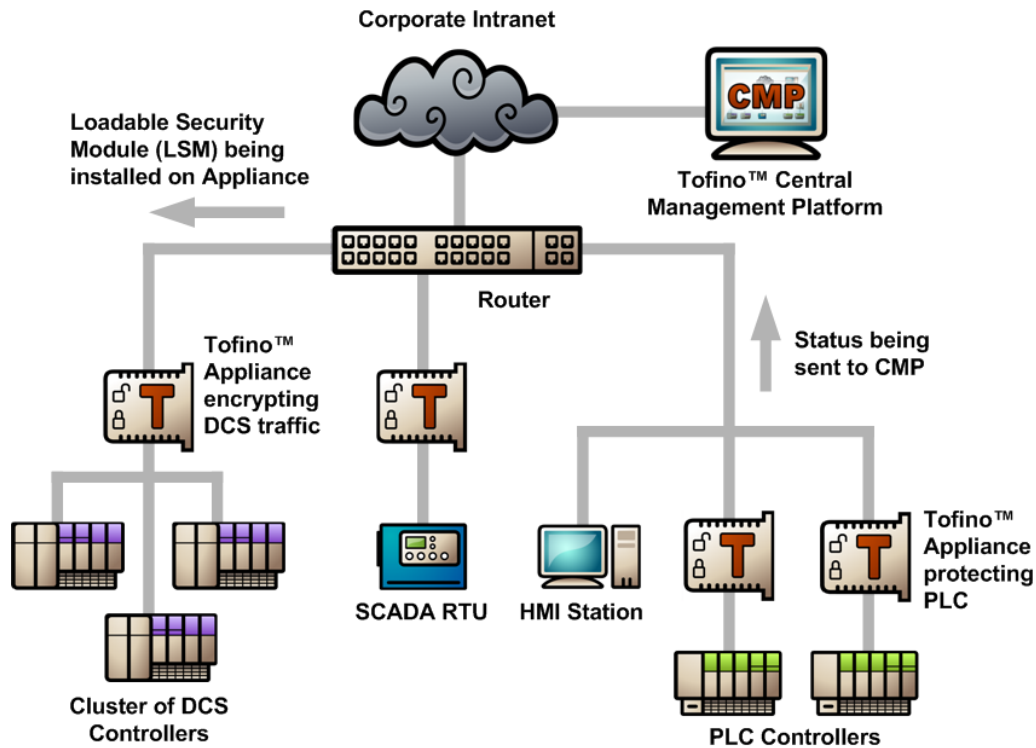
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How Tofino protects your control system

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Protect vulnerable controllers

The PLCs and RTUs in control networks were optimized for real-time I/O performance, not for robust networking connections. Even normal network traffic, like broadcast and multicast messages, can overload some devices and cause them to crash.

Tofino makes it easy for the control engineer to define rules that specify which network devices are allowed to communicate, and what protocols they may use. Any network traffic that does not fit the rules is automatically blocked by Tofino and reported as a security alert.

Improve network segmentation

Many control systems have evolved over time from simple, stand-alone systems to complex interconnected networks. These networks are typically wide-open with no isolation between different sub-systems, so if a problem occurs in one area it can quickly spread throughout the network.

Tofino is the ideal solution for segmenting a control network into security zones. It can be installed into an existing system with no changes to the network, forming 'conduits' of communications between the zones. The control engineer can define rules that specify which network devices are allowed to communicate, and what protocols they may use.

Guard against accidental and malicious intrusion

Even if your control network doesn't connect to the internet, you're still at risk. Studies show that the vast majority of cyber security incidents originate from a variety of secondary points of entry into the network, including the enterprise network; maintenance connections; third-party networks, like partner companies and contractors; and even transient sources, such as laptops that travel in and out of the facility.

A security risk assessment, combined with Tofino's Zone Level Security strategy, identifies potential threat sources and entry points and isolates those points. If an attack does originate from a secondary entry point, the potential damage is contained only to the zone in which the attack originated.

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Features and Specifications

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Network interfaces	Two 10/100 Base T Ethernet interfaces. Tofino connects in-line between the device or zone to be protected ('Secure' network interface) and the rest of the control network ('Unsecure' network interface).
Installation	As shipped, the Tofino Security Appliance transparently bridges all traffic between its Ethernet ports, so it may be installed in an operating control network with no configuration and without disrupting network traffic.
Configuration method	<ul style="list-style-type: none">▪ <i>Network</i>: Tofino Central Management Platform (CMP) uses secure SSH communications to configure each Tofino▪ <i>Manual</i>: encrypted configuration files may be saved on a USB storage device and loaded into Tofino Security Appliance via secure USB port
Operating modes	<ul style="list-style-type: none">▪ <i>Passive</i>: all traffic allowed, no alerting▪ <i>Test</i>: all traffic allowed; alerts generated as per user rules▪ <i>Operational</i>: traffic filtered and alerts generated as per user rules
Mode changes	Operating mode is controlled remotely from the Tofino CMP. Once Tofino is set to Operational mode, the front panel Mode button may be used to toggle between Operational and Test mode
Security alerts	Reports all alerts to the Tofino CMP via proprietary 'heartbeat' messages
Diagnostics	Diagnostics may be captured by the Tofino CMP, or locally via USB
Status indicators and controls	<ul style="list-style-type: none">▪ Status indicators: 'Power', 'Fault', 'Event', 'Mode'▪ Traffic indicators: link status, speed and activity for each Ethernet port▪ Mode pushbutton toggles between Test and Operational mode▪ Config pushbutton loads configuration from encrypted files on USB, and saves diagnostics to USB storage device
Power	<ul style="list-style-type: none">▪ 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
Environmental	<ul style="list-style-type: none">▪ Operating Temperature: -40°C to +70°C▪ Storage Temperature: -40°C to +85°C▪ Relative Humidity: 10% to 90%, non-condensing
Mechanical	<ul style="list-style-type: none">▪ Protection Class: IP20▪ Mounting: 35mm DIN rail, or panel mount▪ Dimensions (mm): 146W x 138H x 42D▪ Weight: 360g
Vibration and shock	<ul style="list-style-type: none">▪ IEC 60068-2-6: 1g @ 20-500Hz▪ IEC 60068-2-27: 30g for 11ms shock▪ EN 61326: EMC Annex A Industrial Locations▪ EN 61010-1
Certifications	<ul style="list-style-type: none">▪ Class I, Div 2 hazardous environments (see 'Approvals' table)▪ CE mark (EMC compatibility)▪ MUSIC 2009-1 security certification (Foundation level)▪ Certified Modbus compliant by Modbus-IDA
System requirements	<ul style="list-style-type: none">▪ Tofino Central Management Platform (CMP)▪ One or more Loadable Security Modules (LSMs) to implement the desired security features

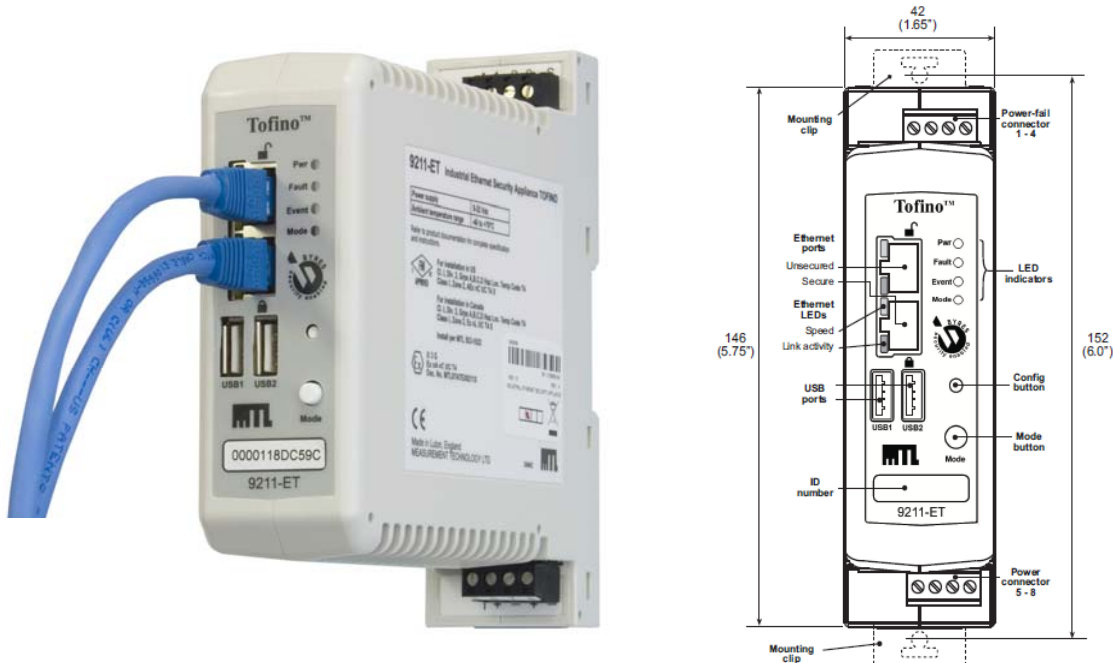
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Approvals and Diagrams

Europe [Authority: ATEX]	<ul style="list-style-type: none"> Standard: EN 60079-15:2005 Approved for: Ⓜ II 3 G Ex nA nC IIC T4 Certificate Number: MTL07ATEX9211X
USA [Authority: FM]	<ul style="list-style-type: none"> Standard: Class 3600 1998; Class 3611 2004; Class 3610 2005 Approved for: Non-incendive for Class I, Div 2 Grps A-D; Zone 2 AEx nC IIC T4 T_A=70°C Certificate Number: 3029914
Canada [Authority: FM]	<ul style="list-style-type: none"> Standard: CAN/CSA E60079-0 2002; CAN/CSA E60079-15 2002; C22.2 No. 1010-1 2004 Approved for: Non-sparking for Class I, Div 2 Grps A-D; Zone 2 Ex nL IIC T4 T_A=70°C Certificate Number: 3029914C
Ordering Information	Part number: 9211-ET Name: Tofino™ Two Port Security Appliance



The Tofino™ Security Appliance is a component of the Tofino™ Industrial Security Solution:

Tofino Security Appliance

Hardware platform implementing Zone Level Security on control networks.



Loadable Security Modules

Firmware modules that customize the security features on Tofino.

- **Firewall:** Traffic Control Cop for industrial networks
- **Modbus TCP Enforcer:** Content Inspector for Modbus
- **Secure Asset Management:** Tracks and protects network devices
- **VPN:** Secure tunnels over untrusted networks

Central Management Platform

Software to configure, manage and monitor all your Tofino Security Appliances from one workstation.



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