Tofino Xenon
Industrial Security Appliance

The Tofino Xenon industrial security appliance provides comprehensive network protection. It is a versatile, extremely ruggedized device that ensures maximum data protection for production systems.

- **Safe and cost-effective** protection of industrial automation networks.
- **Plug-n-Protect™ installation** requires no pre-configuration, no network changes, and no disruption to the control system.
- **Rugged hardware design** for years of reliable service in the harshest industrial conditions.

**Key Features**

- Designed to withstand the harshest industrial conditions; ideal for industries such as power and electric utilities, energy (including oil & gas, nuclear, hydro, wind, and other alternatives), transportation, and process automation.
- This device complies with global standards and is easy to integrate into existing networks. Its unique “test mode” reduces installation risks, such as network interruptions or configuration errors.
- Loadable Security Modules (LSMs) allow the Tofino Xenon to be highly customized to meet the security needs of different protocols, industries, and environments.
- Thanks to its reduced power consumption, it also offers significantly lower operating costs. In addition, the extended operating temperature range of the Tofino Xenon means that it can often be used without supplementary air conditioning equipment.
- A further plus is its support for redundant power supplies operating at any voltage from 12 to 48 V DC (or even 24 V AC).
Benefits at a Glance

- All-around protection of automation networks with an optimal price-performance ratio
- Stateful firewall with Layer 2, 3 and 4 filtering for all Ethernet-based protocols
- Additional application layer filtering for SCADA and ICS protocols using flexible LSMs
- Prevention of Denial of Service (DoS) attacks with rate limit controls
- Simple configuration over the network or with security USB using the Tofino Configurator software
- Test mode for verifying firewall rules without risk to your operation
- LSMs pre-installed at factory or purchased separately
- Simultaneous event logging to remote syslog servers and local nonvolatile memory
- Audit capabilities for tracking configuration changes
- Safe installation in live networks without shutdown
- Tested for use with all major control system products
- Optional extended operating temperature range from -40°C to +70°C (standard is 0°C to +60°C)
- Variants for twisted-pair cables (RJ45) and multimode fibers (SC)
- Robust metal housing for DIN rail mounting
- Meets principal standards and approvals:
  - Energy sector: IEC-62443 and IEC-60870-5-104
  - Hazardous areas: ATEX, ISA-12.12.01 Class 1 Div. 2
  - Transport sector: EN 50121-4
  - Shipping: Germanischer Lloyd

Your Benefits

The Tofino Xenon security appliance is the ideal solution for segmenting a control network into security zones. It can be installed into an existing control system with no changes to the network, forming conduits of communications between the zones. The control engineer defines rules that specify which network devices are allowed to communicate and what protocols they may use. Deep Packet Inspection (DPI) options allow detailed filters to enforce security policy such as only allowing read commands to be sent to a PLC, RTU or an IED device.

Tofino’s flexible architecture allows you to create security zones - Zone Level Security - throughout your control network to protect critical system components. Tofino helps you meet and exceed NERC CIP requirements and ISA/IEC-62443 Standards. And best of all, it helps you avoid expensive down time and achieve optimal performance in your plant.

Applications

The robust design of the Tofino Xenon enables it to withstand the harshest environmental conditions and it can be used wherever maximum data security is called for. This makes it the ideal industrial security appliance for mechanical and plant engineering and industrial automation. Other areas for its versatile use include the transportation sector, with applications ranging from road and rail transport right through to shipping. Indeed, the Tofino Xenon has been certified by Germanischer Lloyd for this very purpose. Since this security appliance is also approved for substations (IEC 61850-3) and for explosive environments (ATEX and ISA 12.12.01 HazLoc), it can also be used in the energy sector as well as in power transmission and distribution systems and renewable energy applications such as wind farms.

Tofino Xenon Security Appliance

The included Tofino Configurator software makes it easy for the control technician to define rules that specify exactly which devices are allowed to communicate, what protocols they may use, and what actions those protocols perform. Any network traffic that does not fit the rules is automatically blocked by the Tofino Xenon and reported as a security alert.

The standard Tofino Xenon includes a stateful firewall with layer 2, 3 and 4 filtering. Adding Enforcer LSMs provides stateful DPI to manage traffic based on high level message content, such as the commands/services being used or the registers/objects being accessed. There are multiple Enforcers available – each one providing inspection for a different protocol. The LSMs can be pre-loaded onto the Tofino Xenon at the factory, or purchased and installed at a later date as your needs change. Other features of this security appliance include extensive management facilities and diagnostic tools, a robust metal housing for DIN rail mounting, and a redundant power supply for both DC and AC.

The Tofino Xenon allows for operating temperature ranges from 0°C to +60°C or from -40°C to +70°C. In addition, there are variants for twisted-pair cables or multimode fibers, as well as with a variety of certifications and approvals including ATEX, IEC 61850-3 and EN 50121-4.

Thanks to its conformance with numerous approvals, the Tofino Xenon offers maximum flexibility in its protection of industrial plants, oil rigs, substations and transportation systems.
## Technical Information

### Product Description

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<th>Type</th>
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<th>TofinoXE-0200T1M2</th>
<th>TofinoXE-0200M2T1</th>
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### Additional Interfaces

#### USB Interface
1 x USB socket to connect auto-configuration adapter ACA21-USB or approved USB storage device

#### Digital Input
1 x plug-in terminal block, 2-pin

#### Digital Output (Signaling Contact)
1 x max. 60 V DC or max. 30 V AC, SELV, max. 1A

### Network Size

| Multimode Fiber (MM) 50/125 µm | 0 to 5000 m, 8 dB Link Budget at 1310 nm, A = 1 dB/km, 3 dB Reserve, B = 800 MHz x km |
| Multimode Fiber (MM) 62.5/125 µm | 0 to 4000 m, 11 dB Link Budget at 1310 nm, A = 1 dB/km, 3 dB Reserve, B = 500 MHz x km |
| Singlemode Fiber (SM) 9/125 µm | 0 - 30 km, 16 dB Link Budget at 1310 nm, A = 0.4 dB/km, 3 dB Reserve, D = 3.5 ps/(nm x km) |
| Twisted Pair (TP) | 0 to 100 m |

### Power Requirements

| Operating Voltage | 12 to 48 V DC, 24 V AC redundant power supply |
| Power Consumption | 5 W 6 W 7 W |
| Power Supply/Signaling Contact | 1 x plug-in terminal block, 6-pin |

### Software

#### Management
Tofino Configurator software

#### Diagnostics
LEDs (power, mode, fault, save/load, reset, link status), signal contact, syslog, configuration verify

#### Configuration
**Network:** Tofino Configurator uses secure communications to configure the Tofino Xenon security appliance
**Manual:** Encrypted configuration files may be saved on a USB storage device and loaded into the Tofino Xenon security appliance via a secure USB

#### Operating Modes
**Test:** All traffic is allowed and alerts are generated as per user rules
**Operational:** Traffic is filtered and alerts are generated as per user rules

#### Firewall
Stateful layer 2, 3 and 4 filtering with optional deep packet inspection for SCADA protocols (depending on purchased LSMs)

#### System Requirements

### Event Logging
Captured by a syslog server or locally into nonvolatile memory for later download via network or USB storage device

### Ambient Conditions

| Operating Temperature | 0°C to +60°C, or -40°C to +70°C (IEC 60668-2-2 Dry Heat Test +85°C 16 hours), dependent on device variant |
| Storage/Transport Temperature | -40°C to +85°C |
| Relative Humidity (non-condensing) | 10% to 95% |
| Conformal Coating | Yes (dependent on device variant) |

### Mechanical Construction

| Dimensions (WxHxD) | 60 x 145 x 125 mm |
| Weight | 660 g |
| Protection Class | IP20 |
| Mounting | DIN Rail 35 mm |

### Approvals

| Declaration of Conformity | CE, FCC, EN 61131, C-TICK, EN 60950 |
| Safety of Industrial Control Equipment | cUL508 |
| Hazardous Locations | ISA-12.12.-01 Class 1 Div. 2 – Haz. Loc, ATEX-95 Category 3G (Zone 2) |
| Germanischer Lloyd | GL |
| Railway (norm) | EN 50121-4 |
| Substation | IEC 61850-3, IEEE 1613 |

### Reliability

| MTBF | 74.5 years 69 years 64.2 years |
| Warranty | 5 years (standard) |
# Tofino Xenon Security Appliance Configurations

## Design/Model

**TofinoXe** = Security Appliance

## Fast Ethernet Ports

- 02 = 2 x 10/100 Mbit/s

## Gigabit Ethernet Ports

- 00 = Not available

## Type Port 1

- T1 = 1 x Twisted Pair RJ45
- M2 = 1 x Multimode SC
- S2 = 1 x Singlemode SC

## Type Port 2

- T1 = 1 x Twisted Pair RJ45
- M2 = 1 x Multimode SC
- S2 = 1 x Singlemode SC (Ports S2S2 is not allowed)

## Temperature Range

- S = 0°C to +60°C
- T = -40°C to +70°C
- E = -40°C to +70°C inclusive Conformal Coating

## Voltage Range

- DD = 12 to 48 V DC/12 V AC

## Approvals

- Z9 = CE, FCC, EN 61311, EN 60950
- Y9 = Z9 + cUL508
- X9 = Z9 + cUL508, ISA12.12
- W9 = Z9 + ATEX
- WX = X9 + ATEX
- U9 = Z9 + GL
- UY = U9 + cUL508
- UT = U9 + cUL508 + EN 50121-4
- T9 = Z9 + EN 50121-4
- TY = T9 + cUL508
- V9 = Z9 + IEC 61850, IEEE 1613
- VY = V9 + cUL508
- VU = V9 + cUL508, GL
- VT = V9 + cUL508, EN 50121

## Preloaded Software Modules

- 0003 = FW + NC
- 0007 = FW + NC + MB
- 000B = FW + NC + OPC
- 000F = FW + NC + MB + OPC
- 0013 = FW + NC + IEC
- 0023 = FW + NC + DNP
- 0035 = FW + NC + IEC + GSE
- 0063 = FW + NC + DNP + GSE

### NOTE:

- FW = Firewall LSM (includes Event Logger LSM), NC = NetConnect LSM, MB = Modbus TCP Enforcer LSM, OPC = OPC Enforcer LSM, EIP = EtherNet/IP Enforcer LSM, DNP = DNP3 Enforcer LSM, IEC = IEC 104 Enforcer LSM and GSE = GOOSE Enforcer LSM

### OEM Type

- TA = Standard

### Configuration

- T = Tofino Standard Configuration

### Software Release

- XX.X.XX = Current Software Release

**NOTE:** The part number categories (OEM Type, Configuration and Software Release) are optional.

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