

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).



The Tofino Xenon industrial security appliance is the latest addition to the Tofino family of security devices purpose built to meet the needs of industry. This device, which ensures maximum data security for production networks, is a combination of the proven Tofino software with state-of-the-art hardware.

Be certain.
Belden.

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.

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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			
Type	TofinoXE-0200T1T1	TofinoXE-0200T1M2 TofinoXE-0200M2T1 TofinoXE-0200T1S2 TofinoXE-0200S2T1	TofinoXE-0200M2M2 TofinoXE-0200M2S2 TofinoXE-0200S2M2
Description	Industrial Security Appliance		
Port Type and Quantity	2 x 100BASE-TX	1 x 100BASE-FX 1 x 100BASE-TX	2 x 100BASE-FX
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 μ m	–	0 to 5000 m, 8 dB Link Budget at 1300 nm, A = 1 dB/km, 3 dB Reserve, B = 800 MHz x km	
Multimode Fiber (MM) 62.5/125 μ m	–	0 to 4000 m, 11 dB Link Budget at 1300 nm, A = 1 dB/km, 3 dB Reserve, B = 500 MHz x km	
Singlemode Fiber (SM) 9/125 μ m	–	0 - 30 km, 16 dB Link Budget at 1300 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	Windows XP, Windows 7 (32- and 64-bit), or Windows Server 2003, 2008, or 2008 SR2.		
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 60068-2-2 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

T o f i n o X e - 0 2 0 0 T 1 T 1 T D D Z 9 0 0 0 F T A T X X . X . X X

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 61131, EN 60950

Y9 = Z9 + cUL508

X9 = Z9 + cUL508, ISA12.12

W9 = Z9 + ATEX

WX = X9 + ATEX

U9 = Z9 + GL

UY = U9 + cUL508

UX = U9 + cUL508, ISA12.12

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

000K = FW + NC + EIP

000Q = FW + NC + MB + EIP

000V = FW + NC + OPC + EIP

000Z = FW + NC + MB + OPC + EIP

0043 = FW + NC + GSE

0053 = 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.