Tofino™ EtherNet/IP Enforcer Loadable Security Module (LSM)

A plug-in Deep Packet Inspection (DPI) module that provides real-time validity checking and content inspection for EtherNet/IP traffic.

The Tofino EtherNet/IP Enforcer LSM makes sure that the only messages your control devices receive are approved commands from approved computers.

Advanced Cyber Threat and Safety Protection for your EtherNet/IP Devices

EtherNet/IP and CIP are excellent protocols for managing Industrial Control Systems (ICS). Unfortunately, they were never designed with security in mind. If an individual is allowed to read data from a controller, then chances are they can also shut down or reprogram the controller.

The Tofino EtherNet/IP Enforcer LSM is a content inspector for EtherNet/IP communications, checking every message against a list of ‘allowed’ objects and services. You can choose from pre-defined lists of common actions, such as Read-Only, or you can build your own custom list of objects and services. Any service that is not on the ‘allowed’ list, or any attempt to access an object that is not approved, is blocked and reported.

The Tofino EtherNet/IP Enforcer LSM makes sure that the only messages your control devices receive are approved commands from approved computers. Accidents involving remote programming are prevented and corrupted messages are blocked, making your control system safer and more reliable.

Saves you Money Through:
- Improved system reliability and stability
- Simplifying compliance to safety and security standards
- Reduced down time and production losses
- Lower maintenance costs

Unique Capabilities:
- Simple configuration using the Tofino Configurator’s graphical user interface
- One-click setup for secure “read-only” communications to controllers
- Protocol 'Sanity Check' blocks any traffic not conforming to the ODVA standards
- Supports multiple EtherNet/IP clients and servers
- Control specialists can optionally define lists of allowed CIP objects and services
- Automatically blocks and reports any traffic that does not match the rules
- Secures all EtherNet/IP CIP Class 3 Explicit messaging

Applications
- Oil & gas custody transfer
- Safety instrumentation systems
- Managing PLC programming stations
- Display-only HMI panels
- Partner access to telemetry data

Be certain.
## Tofino EtherNet/IP Enforcer LSM

### Features and Specifications

<table>
<thead>
<tr>
<th>Type</th>
<th>Description</th>
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<tbody>
<tr>
<td>Supports multiple connections</td>
<td>Multiple client and server EtherNet/IP devices are supported with a unique set of inspection rules and options for each client/server connection</td>
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<tr>
<td>Default filter policy</td>
<td>Deny by default: any CIP object or service that is not on the ‘allowed’ list is automatically blocked and reported</td>
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**User-settable options**

The following options may be set on a per-connection basis:
- Permitted message type (Read-Only Data, Read/Write Data, Any, Advanced)
- Permitted CIP object class
- Permitted CIP service for each class
- Custom or vendor-specific objects and services
- Sanity check enable/disable
- TCP Reset on blocked traffic
- EtherNet/IP debug reply on blocked traffic

**Supported message types**

All CIP class 3 explicit messages

**Configuration method**

Simple configuration using the Tofino Configurator

**Throughput**

1000 packets per second with full content inspection

**Operating modes**

All standard Tofino modes supported:
- Test: all traffic allowed; alerts generated as per user rules
- Operational: traffic filtered and alerts generated as per user rules

**Security alerts**

Reports security alerts to a syslog server and to non-volatile memory on a Tofino Security Appliance

**Tested equipment**

Tested for use with all Rockwell ControlLogix and Schneider PLCs

**System requirements**

- Tofino Security Appliance
- Tofino Firewall/Event Logger LSM
- Tofino Configurator

**Ordering information**

Part number: 942 016-120
Name: Tofino™ EtherNet/IP Enforcer LSM
For additional information, visit [www.belden.com/resourcecenter](http://www.belden.com/resourcecenter)

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**Tofino™ EtherNet/IP Enforcer LSM is a component of the Tofino Security Solution:**

- **Tofino Security Appliance**
  Hardware platform that creates Plug-n-Protect™ zones of security on control and SCADA networks

- **Loadable Security Modules**
  Firmware modules that customize the security features of each Tofino SA:
  - **Firewall**: Monitors and secures industrial network traffic
  - **Modbus, OPC, and EtherNet/IP Enforcers**: Ensure compliance, manage connections, and restrict ICS/SCADA commands
  - **NetConnect**: Provides secure remote configuration over any IP-based network
  - **Event Logger**: Reliably logs security events and alarms

- **Tofino Configurator**
  Software that provides coordinated security management of all Tofino Security Appliances from one workstation or server

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*All specifications are subject to change without notice.*