Updated! Canary Uni-Directional Data Security Diodes

Provide:

▪ **One-Way, Air-Gapped Data Forwarding** ▪ **Reversed Transmissions Blocked** ▪
▪ **Multi & Single-mode + Gigabit Fiber Negotiation** ▪ **9 – 48VDC Power Option** ▪
▪ ***"We Deliver Data Assurance and Increased Customer Confidence!"*** ▪

Canary Gigabit *Uni-Directional* Data Security Diodes, evaluated & **NCDSMO – Listed**, help defend against a broad range of External, Cross-Domain and Insider cyber threats that escape common security applications to reveal or corrupt sensitive information and make mission-critical Data & Services unavailable**.**

GF-55SDN Fiber-Negotiation enabled Data Diodes actively link with a Source-Host device that uses Fiber-Negotiation as its Port default.

Protect secure servers and sensitive data from compromise. Data Security Diodes stand guard between domains where un-restricted two-way, communications increase the risk of penetration, malicious attack and data loss.

Application 1: Canary Gigabit ***GF-55SD*** and ***GF-55SDN*** Data Security Diodes forward information originating from an *un-secured,* open source to a restricted, High-Security destination. Simultaneously, they *optically isolate* the data path to stop all return-path transmissions and completely block the reverse transmission of sensitive information.

Application 2: Position a Canary Data Security Diode to optically isolate a Secured Domain as a trusted information source and be able to *forward* authorized and selectively *released,* data to *less-secure* "lower" domains.

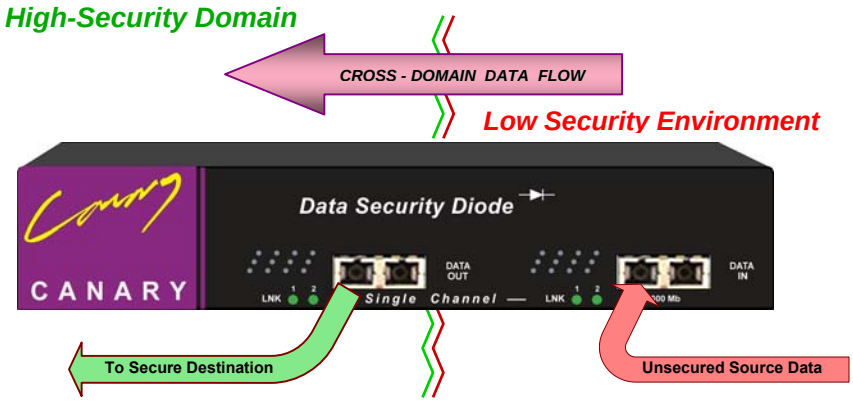
The partitioned data path *shields the* Secure Source from hidden viruses, Trojans, malicious programs or other intrusion attempts and prevents the corruption or unintended release of critical data, or its loss and non-availability.

Diode/Host Fiber connections are nominally full-duplex, however bi-directional full-duplex traffic is not internally forwarded between Data Diode Input & Output ports. Similarly, Flow-Control, IP acknowledgement, and error correction are completely disabled.

Diode variants with **Variable** [**-V**] Input-Power enable flexible **9-48 VDC** Power choices; and **Conformal Z-Coating** [**-Z**] offer Environmental Hardening and reduced Tin-Whisker effects.

Another defensive layer for your critical data, Canary Data Security Diodes easily *"Deliver increased confidence and peace of mind!"*

GF-55SD & GF-55SDN • NCDSMO - Listed
Gigabit Fiber-to-Fiber Single-Point Diodes



Application 1.

▪ *Plug-and-Go Fiber Connections:*

Configure your application to run via UDP. Connect the *un-secure* device *to the Gigabit Ethernet GF-55SD or GF-55SDN* Security Diode "Data-In" port; then simply connect the Security Diode "Data-Out" port to the Secure Domain Host for optically isolated & protected, one-way data transmission (***Application 1***). Reverse the connection scheme for ***Application 2***.

▪ *Flexible, Secure Network/Host Configurations:*

Low to High: Forward information to a Higher Security domain while blocking the un-authorized release of sensitive data in the reverse direction;

High to Low: Restrict authorized user access. Maintain protected, System and Data Security, Integrity and Availability while allowing the limited export of selective information to lower security-level destinations.

Fiber-Negotiation: Link to devices not able to disable Fiber Negotiation

▪ *Hardwired Immunity from External Software threats:*

Canary *GF-55SD* and *GF-55SDN Data Security Diodes* execute their key functions in hardware. With tamper-resistant cases, there is no vulnerable software, firmware, memory or buffers that can be exploited to attack and surreptitiously alter or disable Uni-Directional operation.

Using UDP or similar protocol over the point-to-point link eliminates the need for normal transmission acknowledgments.

Control physical access to your Canary *Data Security Diodes* and their cable connections to thwart unauthorized access and safely deliver critical data where needed – *Easy, Secure, Information Availability!*

Canary Communications

Main Features:

Interfaces – Local Connections:

- GF-55SD and GF- 55SDN: 1000BASE-SX (Multi-mode) *Local* Source-Host & Destination endpoint, User-port links *
- GF-31SD and GF- 31SDN: 1000BASE-LX (Single-mode) *Local* and *Remote* Source-Host & Destination endpoint, User-port links *
- **GF-55SD-Z [VZ]** and **GF- 55SDN-Z [VZ]:** Same as above and:
- [**Z & VZ** ~ include Conformal Z-Coating for environmental hardening and Tin Whisker resistance]

* 1000 Mbps Fiber port Connector Identification:

[55 ~ Multi-mode SX/SC-type Fiber and 31 ~ Single-mode LX/SC-type Fiber]

Management:

- No management reporting or access to internal functions
- No provision for error handling/reporting

Networking – GF-55SD & GF- 55SDN Connections:

- *Local* Source-Host Fiber Handshaking [GF-55SD] or Gigabit Fiber Auto-negotiation [GF-55SDN] is used to make *Local* Full-duplex Source-Host to Data Diode links.
- User (SX) connections operate as *Local* Full-Duplex Links, however NO end-to-end Full-Duplex traffic is transported through the Diode nor propagates bi-directionally

Mechanical & Environmental:

- Mount Inside, Desktop locations or 19" rack-enclosures
- Two units can be mounted side-by-side on a standard 19"-wide shelf (available from Canary)

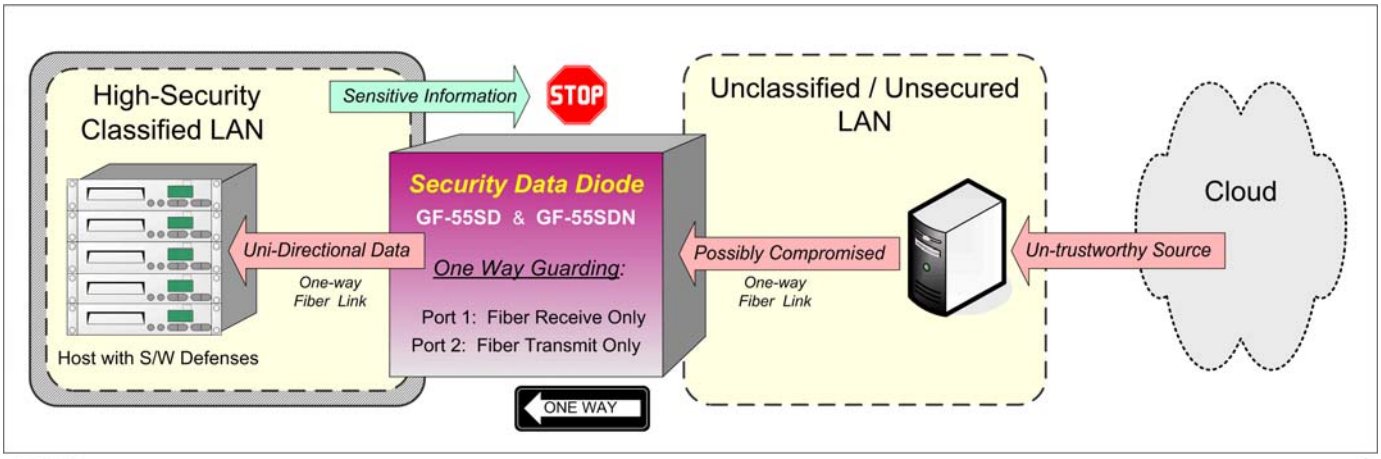
Please contact Canary for technical details on other Diode models with Gigabit Fiber Negotiation

FCC Class A | CE Approval | LASER RADIATION | TUV SUD C US

Specifications:

Standards:	IEEE 802.3z	1000BASE-SX/LX/ZX*
	IEEE 802.1d	Spanning Tree: None
	IEEE 802.1q	VLAN: Limited Functionality
	IEEE 802.3x	Flow Control Not Supported
	RFC 2549	IETF IPoAC & QoS 4-01-99
	NCDSMO	**GF- 55SD [N]** NSA Approved List
Throughput:	GF-55SD*:	1000 Mbps (One-way transmission)
	GF-55SDN*:	Same
Max Distances:	Fiber-Optic :	1000Mb: 500 m, 10, 20, 30, 60 Km
Dimensions:	5.21 in. x 8.43 in. x 1.64 in.	(D x W x H)
	[12.7 cm x 20.3 cm x 4.4 cm]	(D x W x H)

Power:	Typical: 100 ~ 240 VAC Auto-ranging wall-mount
9 - 48 VDC:	**Optional**: **9 - 48 VDC** Input + Terminal Block [**-V**] [**-VZ**] versions use external DC Voltage Sources e.g. **GF-55SD-V [VZ]** & **GF-55SDN-V [VZ]**
Temperature:	Operating: 0º C to 50º C Storage: -20º C to 70º C
Humidity:	Operating: 10% to 80% RH Storage: 5% to 90% RH
Emissions:	CE Mark EN60950 & EN55022 and FCC Part 15 of Class A
Safety:	US 21 CFR (J) & EN 60825-1 standards and UL 1950 applications, EN 60950, CE, TUV
Weight:	5.5 lb. (2.5 Kg) (Shipping Wt.)



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For more information, please visit us at:
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The Canary Communications QMS is Certified to ISO 9001:2015

TÜV NORD TUV USA Inc. ISO 9001:2015

CANARY COMMUNICATIONS

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