New! Canary Uni-Directional Data Security Diodes

Provide:

- One-Way, Air-Gapped Data Forwarding · Reversed Transmissions Blocked ·
- External Loop + UTP Link Auto-Negotiation · 9 − 48 VDC Power Option ·
- "We Deliver Data Assurance and Increased Customer Confidence!" ·

Canary Uni-Directional Data Security Diodes help defend against a broad range of external, Cross-Domain and insider cyber threats that can escape common security applications to reveal or corrupt sensitive information & make mission-critical Data Services unavailable**.**

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 100Mb **CF-21USD-EL** and Gigabit **GF-55USD-EL** 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, trusted, information source and *selectively forward* authorized data to weakly protected *insecure* lower domain destinations.

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

External Loop-Path: Test & Verify one-way Diode operation: Remove one end of Loop-Back Cable Assembly to test Traffic isolation, or remove Cable Assembly to completely block & disable all Data forwarding functions.

Local Data Diode/Host UTP connections are nominally full-duplex. However, bi-directional traffic is not forwarded between Input & Output ports. Acknowledgements, Flow-Control and error correction are completely disabled.

Optional: **9-48 VDC** [**-V**] Variable Input-Power & **Conformal Z-Coating** [**-Z**] for reduced Tin-Whisker effects and Environmental hardening

Canary Data Security Diodes *"Deliver increased confidence and peace of mind!"*

CF-21USD-EL & GF-55USD-EL – External Loop Fiber-to-UTP Data Diodes
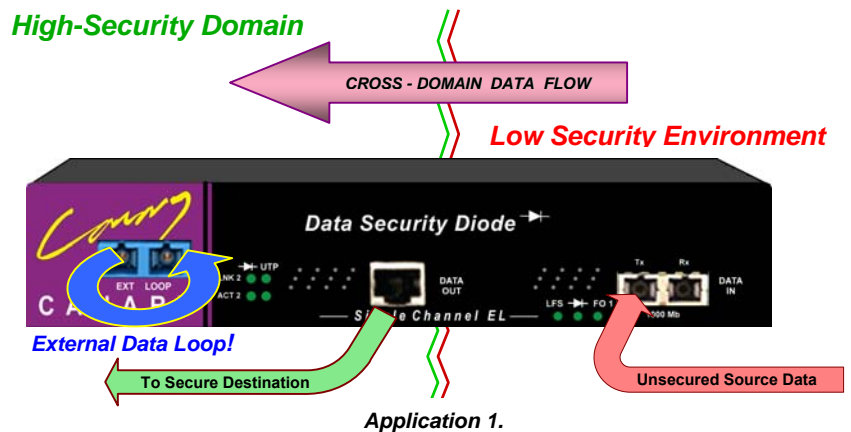
Application 1.

▪ Plug-and-Go Fiber & UTP Connections:

Configure your application to run via UDP. Connect the *un-secure* device to the *CF-21USD-EL or GF-55USD-EL* 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 System and Data Security, Integrity and Availability while allowing the limited export of selective information to lower security-level destinations.

▪ Hardwired Immunity from External Software threats:

Canary *CF-21USD-EL* and *GF-55USD-EL 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

Interfaces – Local Connections:

- CF-21USD-EL: One ea: 100BASE-FX & 100BASE-TX *Local* User port
- GF-55USD-EL: One ea: 1000BASE-SX & 1000BASE-T *Local* User port
- CF-21USD-ELV [VZ] & GF-55USD-ELV [VZ] Same as above
- [**Z & VZ** ~ include **Conformal Z-Coating** for environmental hardening and Tin-Whisker resistance]
- Fiber Port Connector Identification – 100 Mbps* & 1000 Mbps +:
  - * [21 ~ SC-type & 22 ~ ST-type m/m Fiber, 91 ~ SC & 92 ~ ST-type s/m Fiber]
  - + [55 ~ Multi-mode SX/SC-type Fiber and 31 ~ Single-mode LX/SC-type Fiber]

Networking – Local User Connections:

- 100BASE-TX & 1000BASE-T: Auto-negotiation and Auto-crossover enable half/full duplex Ethernet Diode Links with *Local* Source and *Remote* Destination Host equipment.
- 100BASE-FX & 1000BASE-SX/LX: Handshaking to auto-configure *Local* Full-duplex links to Source Host equipment. Gigabit Fiber [Auto] Negotiation with the Source Host is not available using these units.

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)
- SC & ST Cable Assemblies for Diode Loop-Back Front Panel
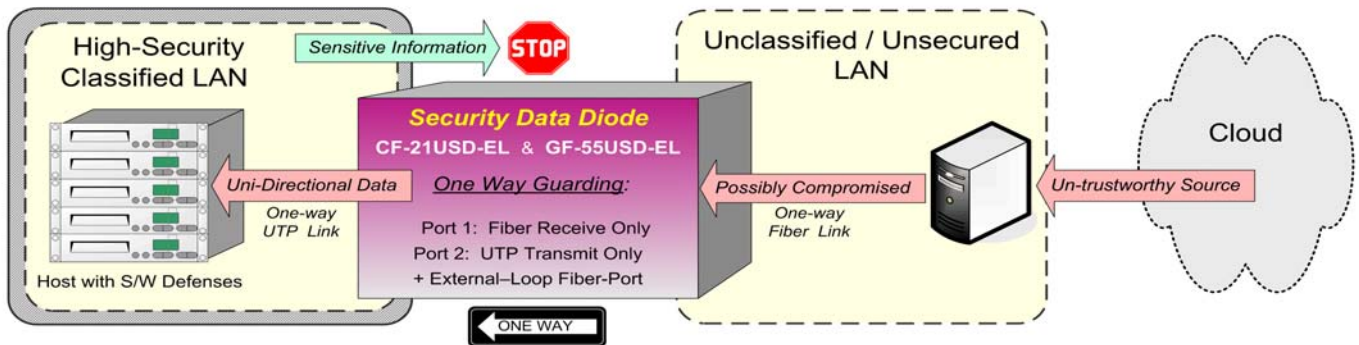
Management:

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

Please contact Canary for technical details on additional models.

Standards:	IEEE 802.3u	100BASE-TX /FX*
	IEEE 802.3ab,x	1000BASE-T/SX/LX*
	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
Throughput:	CF-21USD-EL:	100 Mbps (One-way transmission)
	GF-55USD-EL:	1000 Mbps (One-way transmission)
Max Distances:	RJ-45/UTP :	100 meters
	Fiber Optic :	100 Mb: 2 Km, 20, 40, 60, 80 Km
		1000 Mb: 500m, 10, 20, 30, 60 Km
Weight:	5.5 lb. (2.5 Kg)	(Shipping Wt.)

Power:	Typical: 100 ~ 240 VAC Auto-ranging wall-mount **Optional**: 9 - 48 VDC Input + Terminal Block [**-V**] [**-V**] versions use external DC Voltage Sources
9 - 48 VDC:	**CF-21USD-ELV [VZ]** & **GF-55USD-ELV [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
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)

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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

11-24-21 JM