Updated! Canary Uni-Directional Data Security Diodes

Provide:

▪ One-Way, Redundant Data Transmission ▪ Reverse Transmissions Blocked ▪

▪ Multi-mode or Single-mode Host Connections ▪ Optional 9 – 48 VDC Power ▪

▪ "We Deliver Increased Confidence and Peace of Mind to the Customer!" ▪

Uni-Directional Data Security Diodes are one more defense layer against a broad range of internal/insider or external cyber threats that can escape common security applications – to reveal and corrupt sensitive data or make other mission-critical information services non-available**.**

Place Canary *Uni-Directional* Data Security Diodes in environments where un-restricted two-way, bi-directional communications expose secure servers and their sensitive data to penetration and malicious attack.

Application 1: Redundant Transmission. Data Security Diodes copy/forward information originating from a single *un-secured* open source to a pair of restricted, High-Security destinations using two Fiber Optic links. They simultaneously partition each data path to air-gap and completely block sensitive data from being transmitted in the reverse direction.

Application 2: Canary Data Security Diodes are positioned to allow duplicated/parallel transmission of authorized Data *originating* from a single restricted, High-Security source, to a pair of unprotected, *insecure* destinations.

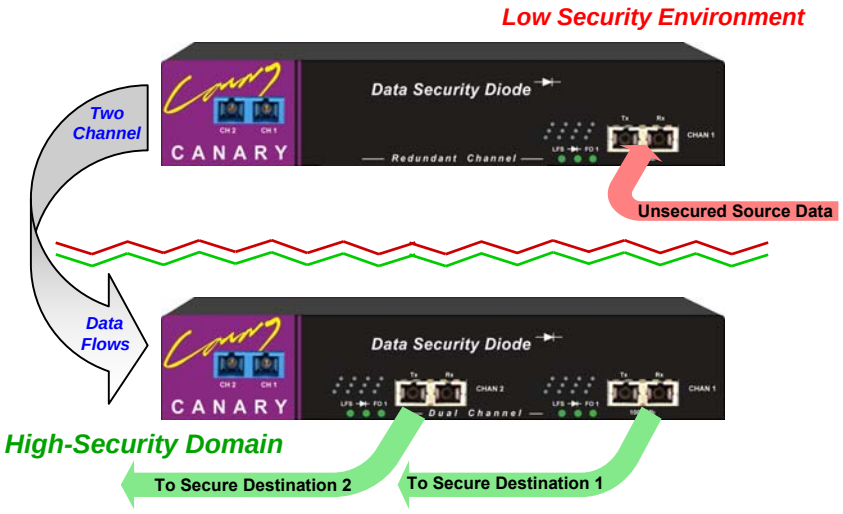
Security Diodes partition their data paths to *shield* secure sources from hidden Trojans, and other intrusion attempts thus preventing the unintended corruption, release or exposure of sensitive information. (*Application 2*.)

Local Diode/Host connections are nominally full-duplex. However, bi-directional traffic is never transmitted between linked Data Diodes. Data handling functions including Flow-Control IP acknowledgements 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.

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

CF-21RD/ CF-21TR & GF-55RD/ GF-55TR – Redundant Channel Data Diodes



Application 1.

▪ *Plug-and-Go Connections:*

Configure your applications to run via UDP. Connect the *un-secure* device to *CF-21RD* or *GF-55RD* transmit-only *Data Security Diodes* that forward traffic to remote, receive-only *CF-21TR* or *GF-55TR* Diodes. The receive-only Diodes copy the traffic to *redundant* pairs of secure Destination Hosts. (***Application 1***.) Reverse configuration for ***Application 2***.

▪ *Flexible, Secure Network/Host Configurations:*

Low to High: Forward information to a Higher Security environment 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 *Data Security Diodes* execute their key functions in hardware. There is no vulnerable software, firmware, memory or buffers that can be exploited to attack and surreptitiously alter or disable their function.

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 safely deliver critical data where needed – *Easy, Secure, Information Availability!*

Canary Communications

Main Features:

Interfaces – Inter-Diode Links & Local Connections:

- CF-21RD: ***Tx only*** (Two) One-way Multi-mode SC 100Mb F/O outputs & (One) *Local* Source-Host m/m F/O **Rx** Input port *
  CF-21TR: ***Rx only*** (Two) One-way SC m/m F/O inputs & (2) *Local* m/m F/O Redundant Destination **Tx**-only Output ports
- CF-91RD & CF-91TR: Same as above with SC Single-mode Fiber ports

* [21 ~ m/m SC-type Fiber connector, 22 ~ ST-type; 91 ~ SC s/m, 92 ~ ST type]

- GF-55RD: ***Tx only*** (Two) One-way SC/SX m/m 1000Mb F/O outputs & (One) *Local* Source-Host SC/SX Fiber **Rx** Input port +
- GF-55TR: ***Rx only*** (Two) One-way SC/SX F/O inputs & (2) *Local* m/m F/O Redundant Destination **Tx**-only Output ports
- GF-31RD & GF-31TR: Same as above with SC/LX (Single-mode) Fiber

\+ [55 ~ multi-mode SX/SC-type Fiber and 31 ~ single-mode LX/SC-type]

- CF-21RD-V / 21TR-V [VZ] & GF-55RD-V / 55TR-V [VZ] Same as above
- [**Z & VZ** ~ include **Conformal Z-Coating** for Environmental Hardening and Tin-Whisker resistance]

Networking – Local User Connections:

- 100BASE-FX & 1000BASE-X/SX/LX: Hand-shake exchange enables full-duplex Ethernet Diode Links with *local* Source-Host equipment.

* 100 & 1000 Mbps Fiber *Inter-Diode Links* do not forward Full-duplex bi-directional traffic. UDP Destination Address, Port Number & Checksum are user enabled by application.

Management:

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

Mechanical & Environmental:

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

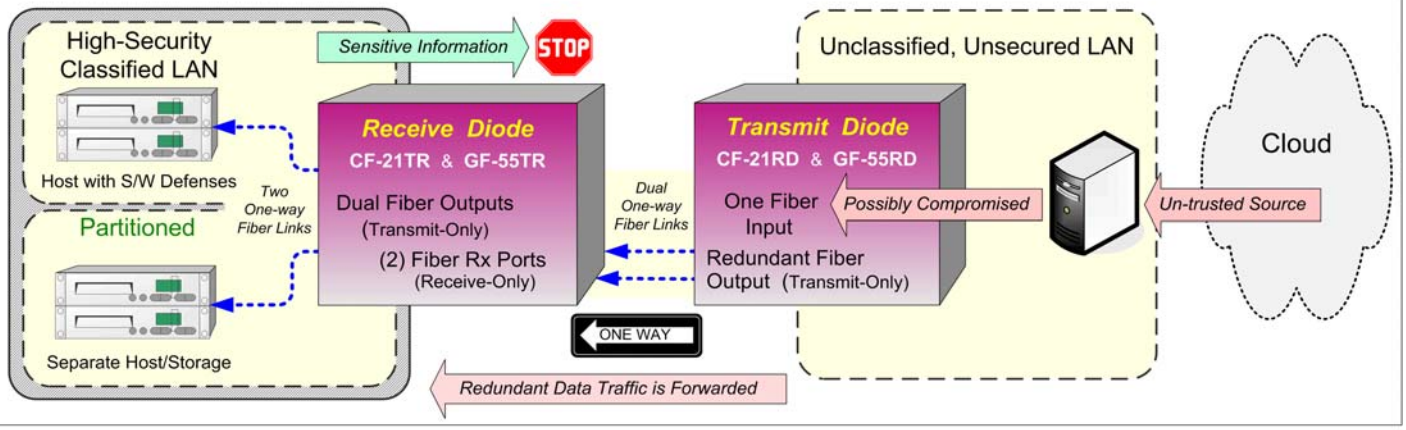
Please contact Canary for technical details on additional models.

FCC Class A CE Approval

Specifications:

Standards:	IEEE 802.3u	100BASE-FX
	IEEE 802.3z	1000BASE-X, 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
Throughput:	CF-21RD:	100 Mbps (One-way transmission)
	GF-55RD:	1000 Mbps (One-way transmission)
Maximum Distances:	Fiber Optic:	100 Mb: 1 Km; 10, 20, 40, 60 Km 1000 Mb: 500 m; 5, 10, 20, 30, 60 Km
Enclosure:	NEMA 1 & International Protection: IPX0	
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**) (**-VZ**) versions use external DC Voltage Sources:
9 - 48 VDC:	**CF-21RD-V [VZ] + GF-55RD-V [VZ] & TR-V**
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

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