

Solid State Latching Relay (SSLR)

RCC-Compliant Thrust-Termination Relay

[PRODUCT OVERVIEW]

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Invocon's Solid State Latching Relay (SSLR) provides isolated, regulated, redundant control over an external power source and its load. The SSLR is a power termination solution for Flight Termination Systems (FTS) whose mode of operation is thrust termination. It accepts two TERMINATE signals from up to two Flight Termination Receivers (FTRs) in a cross-strapped configuration, where either TERMINATE signal can latch off both internal components to cut power to the load. The SSLR was designed to the RCC 319-19 standard.



[CAPABILITIES]

Features & Applications

Key Features

- ◆ Cross-Strapped Redundant TERMINATE Inputs**
 Accepts TERMINATE signals from two independent FTRs in a cross-strapped configuration — either signal can independently latch off both internal components.
- ◆ Isolated, Regulated Load Output**
 Provides a fixed step-down regulated output voltage (5V–21V, customizable) that is electrically isolated from the control circuit.
- ◆ Normally Closed Fail-Safe Architecture**
 Internal switch defaults to closed (power provided to load), with latch-open state requiring a positive TERMINATE input.
- ◆ Power Dropout Survivability**
 Maintains the latched open state through input power dropouts of up to 50 ms, preventing inadvertent reset during transient power interruptions.
- ◆ TM Status Output**
 0–5 Vdc telemetry status output enables real-time monitoring of load power level, on/off state, and TERMINATE control signals.
- ◆ RCC 319-19 Compliant Design**
 Designed to RCC319-19 range safety standard for use in DoD range FTS applications.

Typical Applications

- ◆ **FTS Thrust Termination**
Cuts power to a thrust-producing device upon receipt of a TERMINATE command from an FTR.
- ◆ **Dual-FTR Cross-Strapped Activation**
Supports FTS architectures requiring either of two independent FTR TERMINATE outputs to command power cutoff.
- ◆ **Load Regulation and Protection**
Provides regulated power to sensitive loads that require lower voltage and protection from the raw FTS bus voltage.
- ◆ **Telemetry Health Monitoring**
Feeds TERMINATE command and power state data into the vehicle telemetry stream for post-flight range safety review.

[TECHNICAL DATA]

Key Specifications

SPECIFICATION	VALUE
ELECTRICAL	
Load Power Input	26 to 45 Vdc at up to 4.8 A
Load Power Output	Single fixed voltage, 5V to 21V step-down regulated, up to 4.8 A
Control / Latch Input Voltage	Nominal 28 Vdc
Latch Open Threshold	>15.1 Vdc and < 34Vdc per TERMINATE signal
Internal Switch Default State	Normally Closed (power provided to load)
Power Dropout Survivability (latched open)	Up to 50 ms
TM Status Output	0–5 Vdc scaled for power, on/off state, and control signal monitoring
Standard Compliance	RCC319-19
MECHANICAL	
Size (L × W × H)	6.5 x 4.0 x 2.0 inches (not including connectors)
Weight	Nominal 2.6 lbs
Case Material	7075 aluminum, Alodine coated
ENVIRONMENTAL	
Operating Temperature	-24° to +61°C (Acceptance Levels) -34° to +71°C (Qualification Levels)