AAE Advanced Airport Equipment

L-828 / L-829
Constant Current Regulator

Fig. 1 10KW Spirit Series CCR

System Application

Thyristor (also known as SCR) type regulators are the most common type of CCR installed around the world, largely due to the low cost, high reliability and years of field proven experience. Applications include:

- General aviation, commercial, and military airports operating in VFR to CAT IIIb visibility conditions.
- Runway and taxiway edge lighting, centerline lighting, signs, approach systems, PAPI, VASIS, LAHSO, Runway Guard Lights.
- Surface Movement and Guidance Control Systems (SMGCS) using powerline carrier technology to control and monitor individual lamps or segments.

  Note: Thyristor CCRs can be used on any airfield circuit, however ferro-resonant CCRs are recommended for circuits with oscillating loads.

Standards Compliance

- FAA Advisory Circular 150/5345-10F, June 24/05, Type L-828 and L-829.
- Transport Canada CCR Specification K290-2.
- Canadian Department of National Defence Standards.
- ICAO Aerodrome Design Manual Doc 9157, Part 5.

The *Spirit Series*™ Thyristor Constant Current Regulator (CCR) was designed to provide an economical solution for powering airfield lighting series circuits at General Aviation and commercial airports. With powerful control and monitoring capabilities, it is ideally suited for airports operating in CAT II or III conditions. The *Spirit Series*™ CCR uses the same proven hardware and firmware used in our *Freedom Series*™ CCR and is a result of over 38 years experience in airfield lighting power and control solutions.

Technology Benefits

- Digital control for precise waveform accuracy, high-speed response, and local data storage using Digital Signal Processor technology.
- Digital output accuracy and drift-free circuitry for increased lamp life.
- Digital operator interface provides full monitoring, diagnostics, and alarm indication. Dedicated status LEDs provide clear indication of warning and fault conditions.
- Membrane keys with tactile response provide maintenance personnel with access to all display values and configuration parameters.
- Auto-calibration reduces maintenance costs by eliminating the need for scheduled preventative maintenance service.
- All ratings are dry-type and convection air-cooled. No cooling fans are required.
- Unique wall mount option allows 1KW - 10KW regulators to be installed at eye level for ease of maintenance - a welcome option for senior maintenance staff.
- The CCR is equipped with over current and open-circuit protection as well as input and output lightning protection. A safety interlock ensures power is disconnected when the door is opened.
- All CCRs are user configurable, including selection of 1 to 5 brightness
- Available fully redundant communication support using 100MB Ethernet (Ethernet/IP or Modbus TCP) or RS485 (Modbus or Allen-Bradley DF1).
- User-configurable failsafe capabilities allow last state (latching) or preset brightness selection upon failure of control system.

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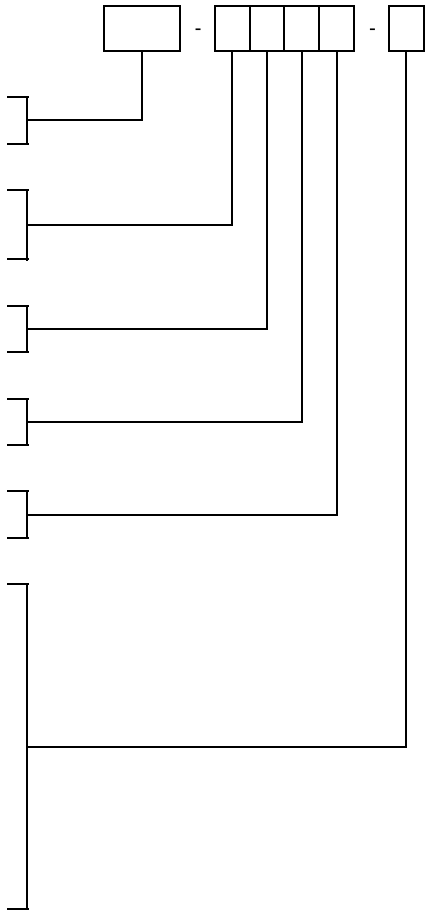
Ordering Information



Type:
SST8 - Freedom Series Thyristor L828
SST9 - Freedom Series Thyristor L829

Output kW Rating:

01 - 1 kW	07 - 7.5 kW	20 - 20 kW
02 - 2 kW	10 - 10 kW	25 - 25 kW
04 - 4 kW	15 - 15 kW	30 - 30 kW

Class:
A - 6.6 A Output
B - 20 A Output

Input Voltage:

1 - 208 VAC, 60 Hz	3 - 480 VAC, 60 Hz	5 - 220 VAC, 50 Hz
2 - 240 VAC, 60 Hz	4 - 347 VAC, 60 Hz	6 - 380 VAC, 50 Hz

Control Voltage:

A - 24VDC Internal	C - 48VDC Internal	E - 120VAC Internal
B - 24VDC External	D - 48VDC External	F - 120VAC External

Options (Select as Many as Required):
02 - Integral Circuit Breaker
06 - Input Lighting Arrestors (required for FAA)
21 - Output Lightning Arrestors (required for FAA)
22 - Internal S1 Cutout
23 - Insulation Resistance Monitor (Automatic Megger)
25 - Output load taps
26 - Output Power Monitoring (voltage, VA, power, power factor)
27 - Input Power Monitoring (current, voltage, VA, power, power factor)
41 - Redundant Ethernet Network Interface
42 - Redundant RS485 Network Interface
43 - Single Ethernet Network Interface
44 - Single RS485 Network Interface
92 - Wall Mounting Kit (1 KW - 10KW only)
93 - Dual height Stacking Kit (1KW to 30KW)

Monitoring Capabilities

- Redundant 24VDC backup power provides monitoring from the control system even during power failure to the CCR.
- Industry leading monitoring and diagnostics including analog output current, commanded and actual brightness step, elapsed time at each brightness step, number of operations, warning and fault conditions including door interlock, local switch position, over current and open circuit trips, communications and hardware failure.
- Available input and output power monitoring (current, voltage, VA, power, and power factor)
- Available L-829 monitoring functions including primary power, circuit trips, loss of VA, brightness within specifications, number of failed lamps per circuit with warning and alarm indication.
- Available insulation resistance monitoring (Automatic Megger) with alarm indications.
- Direct communication interface to Liberty *Freedom Series*™ or *Spirit SE Series*™ Airfield Lighting Control and Monitoring Systems.

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