

POWER EQUIPMENT

CRT

Constant Current Regulator

THYRISTOR, AIR-COOLED



Compliance with Standards

FAA: L-828/L-829 AC 150/5345-10 (Current Edition).
ETL Certified.

Uses

FAA L-828/L-829

Supplies three or five precision output levels to power series lighting circuits on airport runways and taxiways.

Features

- Solid-state operation with no relays eliminates mechanical failures.
- Optional integrated RELIANCE™ Power ACE3 unit with 7-inch LCD touchscreen display provides advanced remote control and L-829 monitoring capability. The new touchscreen design allows all measurements – True-RMS output current and voltage, VA, watts, lamps-out, and series circuit insulation resistance value – to be displayed simultaneously. A visual indication is also provided for FAA-monitored parameters, including open circuit, overcurrent, loss of input power, loss of input voltage, low VA (drop in load VA of 10%), Remote/Local status, and incorrect output current.
- CRT regulators can be stacked two high to minimize floor space requirements. Please see the Product Manual for Stacking Kit information and options.
- Available in one class and two styles:
Class 1 = 6.6 A maximum output current
Style 1 = 3 Brightness Steps
Style 2 = 5 Brightness Steps
- Power taps on output winding of main transformer provide efficient (high primary power factor) operation at all load levels: 10% taps from 10% to 100%.
- If input power loss occurs, operation will resume within five seconds after restoration of input power.
- Number of Brightness Steps can be changed in the field (between 3 and 5 Steps).
- L-828 CRT regulators can be upgraded in the field to L-829 CCRs with RELIANCE Power ACE3
- Input and output lightning protection included.

Theory of Operation

Solid-state control and monitoring feedback circuitry is used for output current regulation of ± 0.1 A over an input voltage variation of -5% to +10% of nominal. If the load on the regulator varies, a gating signal controlled by feedback circuitry changes the control circuit conduction angle in order to control the power to the main transformer. This maintains the transformer's output current at the preset brightness level.

RELIANCE Power ACE3 Unit

The optional RELIANCE Power ACE3 unit provides L-829 monitoring and optional Insulation Resistance and CCR Input Monitoring capability.

- CCR output, current, voltage, VA, watts
- CCR input voltage
- CCR run-time by step
- CCR cycle count

Optional CCR input monitoring adds the following parameters:

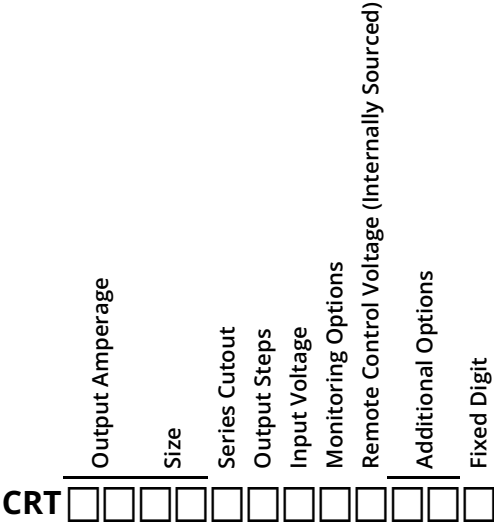
- CCR input current
- CCR input volt-amps (VA)
- CCR input power (watts)
- CCR input power factor
- CCR % efficiency

The RELIANCE Power ACE3 unit is also a component of ADB SAFEGATE's distributed control and monitoring system. Each unit can be easily connected to an Airport Lighting Control & Monitoring System (ALCMS) by simply adding redundant communication wires. More information can be found on the RELIANCE Power ACE3 data sheet 3097.

Application

The CRT thyristor type CCR should not be used to power an L-849 REIL system using xenon flash lamps unless the CCR is at least half loaded with steady burning lights. The CRT-Type CCR should not be used to power Runway Guard Lights using incandescent (tungsten-halogen) lamps regardless of load. Do not route output cable in the vicinity of other wiring sensitive to electromagnetic interference or radio frequency interference. See RELIANCE Power CRF ferroresonant regulator data sheet 4024 for these applications.

Ordering Code



Output Amperage

66 =
6.6 A max

Size

04 = 4 kW
 07 = 7.5 kW
 10 = 10 kW
 15 = 15 kW
 20 = 20 kW
 30 = 30 kW

Series Cutout

N = No Cutout
 A = With Cutout¹

Output Steps

3 = 3-step
 5 = 5-step

Input Voltage

A = 208, 60 Hz
 B = 220, 60 Hz
 C = 240, 60 Hz
 D = 347, 60 Hz
 E = 380, 60 Hz
 F = 480, 60 Hz
 H = 208, 50 Hz²
 I = 220, 50 Hz²
 J = 230, 50 Hz²
 K = 240, 50 Hz²
 M = 400, 50 Hz²

Monitoring Options

0 = L-828 with Analog Current Meter
 2 = L-828 / L-829 with ACE3
 3 = L-828 / L-829 w/ACE3, IRMS, Input Power Monitor

Remote Control Voltage (Internally Sourced)

A = 120 VAC
 B = +48 VDC
 C = +24 VDC

Additional Options

00 = No Additional Options
 01 = Output Current Sensing Relay
 02 = Door Documentation Pocket
 03 = Option 01 + Option 02
 08 = Input Circuit Breaker

Fixed Digit

0 = 0

Environmental Operating Conditions

Temperature L-828: -40°C to +55°C (-40°F to +131°F)
 L-829: 0°C to +55°C (+32°F to +131°F)

Humidity 10 to 95%

Altitude 0 to 6,600 ft (2,000 m)

Power Supply

Power Input	60 Hz, 1 P, 208 - 480 VAC (-5/+10%) 50 Hz, 1 P, 208 - 400 VAC (-5/+10%)
Power Factor	0.90 minimum for 4 - 10 kW* 0.95 minimum for 15 - 30 kW*
Efficiency	90% minimum for 4 - 25 kW* 92% minimum for 30 kW*
Remote Control (internally sourced)	120 VAC 50/60 Hz (-5/+10%) +48 VDC (±10%) +24 VDC (±10%)

* At top step with full resistive load.

Weights and Dimensions

CCR Size	Dimensions in (mm) (H x W x D)	CCR Weight lb (kg)	Shipping Weight lb (kg)
4 - 30 kW	40 x 24 x 26 (1016 x 610 x 660)	4 kW: 215 (91.5) 7.5 kW: 265 (120.2) 10 kW: 302 (137) 15 kW: 470 (213.5) 20 kW: 553 (250.8) 30 kW: 705 (320)	4 kW: 255 (115.7) 7.5 kW: 305 (138.3) 10 kW: 342 (155.1) 15 kW: 510 (231.3) 20 kW: 593 (269) 30 kW: 745 (338)

Additional Options

Additional options are available to customize CCRs for specific application requirements.

- Output Current Sensing Relay Option: provides a dedicated dry contact closure if CCR output current is present
- Door Documentation Pocket Option: provides a pocket for CCR documentation on the inside of the front door
- Input Circuit Breaker Option: replaces the standard input power fuses with an internally mounted thermal circuit breaker

Not all Additional Options are shown in the ordering code. Please contact ADB SAFEGATE Sales for further information.

¹ 2-15 kW equipped with S1 cutout. 20-30 kW equipped with ALSC cutout.
² Not ETL Certified.