RELIANCE Power CRF

Constant Current Regulator

Ferroresonant, Air-Cooled

Compliance with Standards

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

Uses

FAA L-828/L-829 & ICAO
Provides three or five precision output levels to power series lighting circuits on airport runways and taxiways.

Features

- Advanced CCR architecture produces minimal EMI, high efficiency, and near unity power factor for AC 150/5345-10 test conditions. Exceeds FAA and military requirements for power factor and efficiency.
- Complies with the conducted power line emission limits test listed in Table 4 of AC 150/5345-10 and as specified in the Code of Federal Regulations (CFR) Title 47, Sub part B, Section 15.107b. Also complies with the radiated emission test listed in Table 5 of AC 150/5345-10 and as specified in the Code of Federal Regulations (CFR) Title 47, Sub part B, Section 15.109b.
- 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.
- RELIANCE™ Power CRF regulators can be stacked two high to minimize floor space requirements. Please see the Product Manual for Stacking Kit information and options.
- Interlock switch cuts power when the door is opened.
- Available in two classes and styles:
  Class 1 = 6.6 A maximum output current
  Class 2 = 20 A maximum output current (15-30 kW only)
  Style 1 = 3 Brightness Steps (6.6 A output current only)
  Style 2 = 5 Brightness Steps
- 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 CRF regulators can be upgraded in the field to L-829 CCRs with RELIANCE Power ACE3
- Input and output lightning protection included.
- A ferroresonant CCR is preferred for airports that require low output harmonic content (EMI) or that have varying loads, such as Runway Guard Lights, L-849 REIL, or Runway Status Lights (RWSL).
- For 20 A, 50 & 70 kW CCRs, refer to CHF data sheet DS-3013.

Theory of Operation

A ferroresonant transformer is used to supply constant current to the series circuit. Using a feedback current sensing transformer, the output is regulated to ensure that a constant current is delivered to the series field circuit per FAA regulations. The output is modulated by controlling the current flowing in the tank circuit of the ferroresonant transformer.

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 power (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.

RELIANCE Power CRF

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 - 600 VAC (-5/+10%) 50 Hz, 1 P, 208 - 400 VAC (-5/+10%)
Power Factor:	0.99 typical*
Efficiency:	90% minimum for 2.5 - 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)
2.5 - 10 kW	40 x 24 x 26 (1,016 x 610 x 660)	2.5 kW: 277 (126) 4 kW: 443 (201) 5 kW: 505 (229) 7.5 kW: 597 (271) 10 kW: 663 (301)	2.5 kW: 317 (145) 4 kW: 483 (220) 5 kW: 545 (248) 7.5 kW: 637 (290) 10 kW: 703 (320)
15 - 30 kW	40 × 31.5 × 31.5 (1,016 × 800 × 800)	15 kW: 755 (342) 20 kW: 1048 (475) 25 kW: 1201 (545) 30 kW: 1355 (615)	15 kW: 795 (361) 20 kW: 1088 (494) 25 kW: 1241 (564) 30 kW: 1395 (634)

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.

Ordering Code

CRF□□□□□□□□□□□□

Output Amperage
66 = 6.6 A max
20 = 20 A max

Size
02 = 2.5 kW (6.6 A only)
04 = 4 kW (6.6 A only)
05 = 5 kW (6.6 A only)
07 = 7.5 kW (6.6 A only)
10 = 10 kW (6.6 A only)
15 = 15 kW
20 = 20 kW
25 = 25 kW
30 = 30 kW

Series Cutout
N = No Cutout
A = With Cutout[1]

Output Steps
3 = 3-step[2]
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
G = 600, 60 Hz[3]
H = 208, 50 Hz[3]
I = 220, 50 Hz[3]
J = 230, 50 Hz[3]
K = 240, 50 Hz[3]
L = 380, 50 Hz[3]
M = 400, 50 Hz[3]

Monitoring Options
0 = L-828 with Analog 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

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Notes
1 Not ETL Certified in Sizes 20 - 30 kW with 6.6 A Output
2 Not ETL Certified when combined with 20 A Output Amperage
3 Not ETL Certified.