

POWER EQUIPMENT

LT8 - LT9

Constant Current Regulator THYRISTOR, AIR-COOLED



Compliance with Standards

- FAA:** L-828/L-829 AC 150/5345-10 (Current Edition).
- ICAO:** Aerodrome Design Manual Part 5, para. 3.2.1.4 to 3.2.1.6.
- T/C:** Transport Canada CCR Specification K290-2. Canadian Department of National Defence Standards.

Uses

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

Overview

The LT8/LT9 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 also ideally suited for airports operating in CAT II or III conditions.

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.

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

Features

- 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.
- All CCRs are dry-type and convection air-cooled. No cooling fans are required.
- Unique wall mount option, included with all 1 - 7.5 kW regulators, allows the cabinet to be installed at eye level for ease of maintenance.

- All CCRs can be stacked to save floor space. Regulators up to 7.5 kW can be stacked 3 units high. Larger regulators can be stacked 2 high. Casters are available for 10 - 30 kW regulators.
- The CCR is equipped with over-current, open circuit, over-voltage, 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 steps, output current adjustment, selection of monitoring features, operational parameters and alarm set points.
- User-configurable failsafe capabilities allow last state (latching) or preset brightness selection upon failure of control system.

Standard L-829 Monitoring Capabilities

- Industry leading monitoring and diagnostics including analog output current, commanded and actual brightness step, elapsed time at each step, number of operations, warning and fault conditions including door interlock, local switch position, over current, over voltage or open circuit trips, communications or 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.
- Available fully redundant communication support using 100MB Ethernet (Ethernet/IP or Modbus TCP) or RS485 (Modbus or Allen-Bradley DF1).
- Redundant 24 VDC backup power provides monitoring from the control system even during power failure to the CCR (included with communication options).

Note: L-828 monitoring is output current only.

Environmental Operating Conditions

Temperature: -40 °C to +55 °C (-40 °F to +131 °F)
Humidity: 10 to 100%
Altitude: 0 to 9,843 ft (3,000 m)

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Ordering Code

CCR Type

- 8 = L-828 Thyristor
- 9 = L-829 Thyristor

Construction

- N = Stand Alone

Output kW Rating

- 01 = 1 kW, 6.6 A only, with Wall Mounting Kit
- 02 = 2 kW, 6.6 A only, with Wall Mounting Kit
- 2A = 2.5 kW, 6.6 A only, with Wall Mounting Kit
- 04 = 4 kW, 6.6 A only, with Wall Mounting Kit
- 05 = 5 kW, 6.6 A only, with Wall Mounting Kit
- 07 = 7.5 kW, 6.6 A only, with Wall Mounting Kit
- 10 = 10 kW, 6.6 A only
- 15 = 15 kW
- 20 = 20 kW
- 25 = 25 kW
- 30 = 30 kW

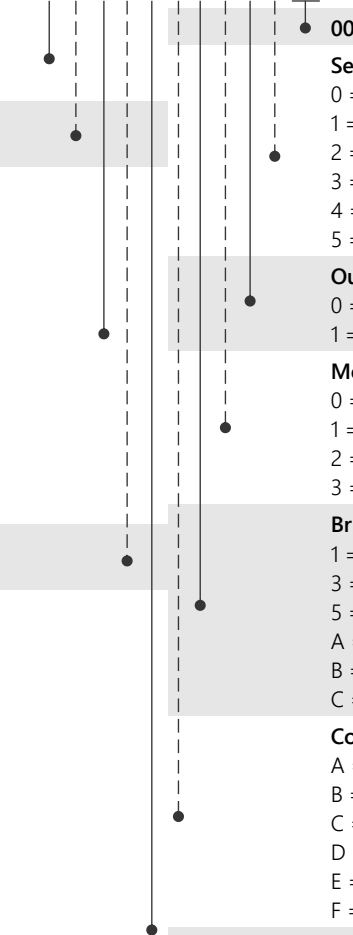
Class

- A = 6.6 A Output

Input Voltage & Breaker

- 1 = 208 V, 60 Hz, without Circuit Breaker
- 2 = 240 V, 60 Hz, without Circuit Breaker
- 3 = 480 V, 60 Hz without Circuit Breaker
- 5 = 220 V, 50 Hz, without Circuit Breaker
- 6 = 230 V, 50 Hz, without Circuit Breaker
- 7 = 380 V, 50 Hz, without Circuit Breaker
- 8 = 400 V, 50 Hz, without Circuit Breaker
- 9 = 220 V, 60 Hz, without Circuit Breaker
- B = 208 V, 60 Hz with Circuit Breaker
- C = 240 V, 60 Hz with Circuit Breaker
- D = 480 V, 60 Hz with Circuit Breaker
- F = 220 V, 50 Hz with Circuit Breaker
- G = 230 V, 50 Hz with Circuit Breaker
- H = 380 V, 50 Hz with Circuit Breaker
- I = 400 V, 50 Hz with Circuit Breaker
- J = 220 V, 60 Hz with Circuit Breaker
- K = 347 V, 60 Hz with Circuit Breaker

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Serial Communication

- 0 = None
- 1 = Redundant Ethernet Network Interface
- 2 = Redundant RS485 Network Interface
- 3 = Single Ethernet Network Interface
- 4 = Single RS485 Network Interface
- 5 = Single Ethernet & Single RS485

Output Load Taps

- 0 = None
- 1 = 20% increments

Monitoring

- 0 = Standard Monitoring (L-828/L-829)
- 1 = Input Monitoring (L-829 only)
- 2 = IRMS (L-829 only)
- 3 = IRMS & Input Monitoring (L-829 only)

Brightness Steps

- 1 = Single-Step¹
- 3 = 3-Step¹
- 5 = 5-Step
- A = Single-Step w/Integrated Cutout
- B = 3-Step w/Integrated Cutout
- C = 5-Step w/Integrated Cutout

Control Voltage

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

Note

¹ Single-step and 3-step, 20 A are not recognized by the FAA.

Weights and Dimensions

| CCR Size | Enclosure (H x W x D) | Weight - kg (lb) |
|------------------|--|---|
| 1, 2, 4 & 7.5 kW | 67.3 x 61 x 30.5 – cm 26.5 x 24 x 12 – in | 1 kW: 63.5 (140) 2 kW: 70.3 (155) 4 kW: 86.2 (190) 7.5 kW: 108.9 (240) |
| 10 & 15 kW | 67.3 x 61 x 61 – cm 26.5 x 24 x 24 – in | 10 kW: 142.9 (315) 15 kW: 170.1 (375) |
| 20, 25 & 30 kW | 101.6 x 61 x 61 – cm 40 x 24 x 24 – in | 20 kW: 204.1 (450) 25 kW: 235.9 (520) 30 kW: 254.0 (560) |

CCR Kits

Various kits are available to customize CCRs for specific application requirements.

| | |
|---|--------------------------|
| Caster Kit, 10-30kW Only | 94A0733 |
| Floor Mounting/Stacking Kit | Call ADB SAFEGATE |
| All CCRs can be stacked to save floor space. Regulators up to 7.5 kW can be stacked 3 units high using the floor mounting / stacking C-channels. Larger regulators can be stacked 2 high. | |