

POWER EQUIPMENT

SGRS

SwitchGear Regulator System



Compliance with Standards

- FAA:** L-828/L-829 AC 150/5345-10 (Current Edition).
Monitoring according to AC 150/5345-10 (Current Edition). Ferroresonant powerpacks are ETL Certified.
- ICAO:** Aerodrome Design Manual Part 5, para. 3.2.1.4 to 3.2.1.6
- Military:** UFC 3-535-01; NAVAIR 51-50AAA-2

Uses

Supplies three or five precision output currents to power series lighting circuits on airport runways and taxiways. The SwitchGear Regulator System is available in a ferroresonant design, which is optimized for lowest EMI and best power factor.

Features

- Integrated Advanced Control Equipment (ACE) system provides full control and L-827/L-829 capabilities. See DS-3097 for additional information.
- Uses up to 67% less space in the airfield vault
- All wiring goes into an incoming power bay and is transferred via bus bars to the power packs, eliminating the need for separate input power wiring to individual Constant Current Regulators (CCRs)
- Front doors have a two-point latching system for smooth operation and positive seal
- Built-in True-RMS reading ammeter
- Available in two classes and styles:
Class 1 = 6.6 A max. output current from 2.5 kW to 30 kW
Class 2 = 20 A max. output current from 15 kW to 70 kW
Style 1 = 3 Brightness Step CCR (6.6 A only)
Style 2 = 5 Brightness Step CCR (6.6 A or 20 A)
- Air-cooled to allow more efficient transfer of heat from the power core and eliminate the need for oil containment reservoirs in the vault
- Accurately regulates the output current to within $\pm 3\%$ of the adjustable nominal level from no load to full load and with an input voltage variation of -5% to +10%

- Nominal output current levels are maintained even when 30% of the isolation transformers have open secondaries
- If input power loss occurs, operation will resume within five seconds after restoration of input power
- A gray polyester electrostatic paint is applied over a zinc undercoat to the NEMA 12-rated enclosure.

Ordering Information

To order a SwitchGear Regulator System, contact the ADB SAFEGATE Sales Department.

Protection

L-828 SGRS CCRs have the following protection devices:

- Output overcurrent
- Output open-circuit
- Lightning and transient protection on output terminals
- Fuse protection: Remote control supply voltage (+48 VDC or 120 VAC) and power supply for control board
- Input breaker for supply voltage
- Input lightning protection

Control

L-828 SGRS CCRs have the following controls:

- Local operation using a front panel rotary switch
- Remote operation using either 120 VAC (Internal or External) or +48 VDC (External) signals
- Optional remote operation via an Airport Lighting Control & Monitoring System (ALCMS) using ADB SAFEGATE's integrated ACE system

Theory of Operation

Ferroresonant

The regulator consists of a ferroresonant transformer, capacitors, and control circuitry. Output current regulation is accomplished by adjusting the ferroresonance in the capacitor bank using an electronic feedback network.

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Operating Conditions

Temperature	-40 °F to +131 °F / -40 °C to +55 °C
Humidity	10 to 95%
Altitude	0 to 6,600 ft / 2,000 m

Optional Equipment

Ferroresonant SGRS Lift, Battery Operated (Requires 44A7027
11 ft of space in front of lineup)

SGRS Power Supply

Power Input	480 VAC, 60 Hz, three-phase Each individual CCR is powered by 480 VAC, 60 Hz, single-phase
Powerpack Power Factor (See Note after the table)	0.99 or more for 2.5 to 30 kW 0.95 or more for 50 and 70 kW
Powerpack Efficiency (See Note after the table)	90% minimum for 2.5 to 25 kW 92% minimum for 30 kW 93% minimum for 50 kW 94% minimum for 70 kW

Note: Powerpack Power Factor and Efficiency tested with 100% resistive load according to FAA AC 150/5345-10 (current edition)

Options

- Built-in LED True-RMS output current digital meter can optionally display output True-RMS voltage and VA
- Custom fault current ratings available, 65K AIR standard
- Temperature alarm
- Double bus for large systems
- Fan ON indicator
- Door interlock LED indicates door not properly closed
- Airfield insulation resistance measurement system (see data sheet 1218 for details)

SGRS CCR Dimensions/Weight

Ferroresonant H × W × D
Powerpack Bay 102 × 38.5 × 48 in / 259 × 97.79 × 121.92 cm
Cutout Bay 102 × 38.5 × 48 in / 259 × 97.79 × 121.92 cm
Power Bay 102 × 24 × 48 in / 259 × 61 × 121.92 cm
Interface Bay 102 × 24 × 48 in / 259 × 61 × 121.92 cm
Maximum Weight - 30kW Powerpack 1300 lb / 590 kg

Note: Ferroresonant SGRS is certified under part number FLPPXXXX/XXXX for 2.5 to 30kW powerpacks and PHFXXXX/XXX for 50 to 70 kW powerpacks.