

# CCR-2100C

**Stackable Sine Wave output Constant Current Regulator – AES**



## Contact details:



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## Compliance

- ICAO Aerodrome Design Manual Part. 5
- FAA AC 150/5345-10
- IEC: 61822
- AENA: PPT\_002-05\_13

## Uses

Switch mode constant current regulator especially designed to power airport lighting series circuits at various intensity levels.

## Features

- **Stackable:** Small size and low weight, stackable on industrial shelves or up to 3 CCRs being stacked together for reducing the footprint.
- **Sine wave:** Pure sine wave output, effectively increase life expectancy of luminaires. Also Higher PWM frequency and lower temperature rise by using state of the art transistor technology, natural cooling and no noise. It is perfectly suitable for loads of various characteristics.
- **0.99:** Power factor exceeding 0.99, up to 6 brightness steps, user adjustable output current, lightning protection at both input and output sides, comprehensive over current and over voltage protection.
- **32-BIT:** 32-bit high speed processor providing microsecond speed in transaction, 7 inches full color touch screen provides rich information and parameter settings, lamp fault detection provides accurate detection of faulty luminaires, 1GΩ high precision on-line insulation resistance measurement, various types of remote control interfaces.

## Concept

The innovative design principle adopted for CCR-2100C family is based on transferring most of the power control tasks from the hardware circuits into the software processing of control algorithms.

- An IGBT H-bridge transfers the input signal into a PWM (Pulse Width Modulation) output sine wave. The switching timing is controlled directly by a very fast DSP (Digital Signal Processor) loaded with proper software.
- An A/D converter at the secondary side of the output transformer measures the output signal. The high speed DSP allows for real time control and decreases the regulation dynamics to one tenth compared with traditional thyristor type CCRs.
- The same microprocessor also detects the lamp and earth faults and manages any other useful status information for local or remote control and monitoring.
- The remote control and monitoring can either be realized via multi-wire, or serial bus via single or dual CAN-bus connection.
- Power quality filters protect the main against harmonic pollution on the mains.

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## Dimensions



## Order code

Type of CCR

CCR-2100C 5 - B - D

Output Power

02 = 2.5 kVA  
05 = 5 kVA  
07 = 7.5 kVA

Input Voltage  
(50/60 Hz)

A = 220/240V  
B = 380/400V

Remote Control

M = Multiwire C = Single J-BUS  
A = Single CAN-BUS D = Dual J-BUS  
B = Dual CAN-BUS

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## Specifications

### ENVIRONMENTAL CONDITIONS

Under IEC 61822 environmental conditions  
Ambient Temperature: -30°C +55°C  
Altitude: 0 5000m

### COOLING

Natural air cooling for all ratings with no nose.

### ENCLOSURE

The CCR-2100C type CCRs are small size and low weight, stackable on industrial shelves or up to 3 CCRs being stacked together for reducing the footprint.  
Baked epoxy powder coating color RAL 7035  
Dimensions (W×D×H) mm : 600×600×675

### RATINGS

2.5, 5, 7.5kVA.

### INPUT VOLTAGE RATINGS

220/240 VAC or 380/400VAC ± 10% 50/60Hz  
Single phase

### REMOTE CONTROL

Multi-wire: 24 or 48 V DC  
Multiplex: Protocol CAN-Bus protocol, Single or Dual J-BUS protocol over RS485

### BRIGHTNESS CONTROL

Up to 6 brightness steps.  
Within ±1% for all the brightness steps, under either IEC or FAA standard conditions.

### REGULATIONS RESPONSE TIME

The regulation time is less than 0.5 seconds for any operational condition.

### EFFICIENCY

Up to 94% depending on the CCR size, under nominal resistive load, nominal output current and nominal input voltage.

### POWER FACTOR AT THE OUTPUT

Power factor at the output exceeds IEC and FAA requirements.  
The power factor at rated load is close to 1 and is kept at high level for any possible operational conditions.  
The power factor at over of the rated load is greater than 0.9 and is kept at all level for any possible operational conditions.

### TOTAL HARMONIC DISTORTION

The input and output current total harmonic distortions not exceeding 5%.

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