



Compliance with Standards

CAAC: MH/T 6010-2017
 ICAO: DOC 9157, Part 5, Para3.2
 IEC: 61822-2009
 IEC: AC150/5345-10H

Application/Use

Specially used for power supply and control for airport series lighting circuits with output current 2.8-6.6A

Features

- Adopt IGBT AC conversion technology and dual core DSP with high adjustment accuracy and fast dynamic response;
- Power frequency sine wave output, low output current harmonic;
- Designed with separate power supply module, low noise;
- Power factor no less than 0.97 and 96% output efficiency;
- 2.8-6.6A 5-level dimming, and current accuracy less than $\pm 0.1A$;
- The preset brightness level current can be reached within 0.5s after starting or switching to any brightness level;
- Modular design, simple structure, high reliability and easy management;
- Fast dynamic response capabilities, with protection functions such as open circuit, short circuit, and over-current, etc;
- With standard redundant dual CAN, dual 485 communication interfaces and switch design to achieve matching control with switching cabinet and monitoring system;
- With insulation resistance detection unit accessories, and the detection insulation value range reaches 10K Ω - 2G Ω ;
- With fail open device detection accessories, and detection accuracy of the number of failed lighting fixtures is less than 2%;
- Adopt fast response IGBT control technology, which can intelligently control and protect within 1.4ms;
- Use wide-angle LCD touch screen, allowing on-site configuration without any accessory equipment;
- Equipped with an emergency brightness light level control knob switch to achieve operation and control in an emergency;
- With warning, alarm, and abnormal event recording functions.

1. The innovative design of the CCR-I series is based on the DSP dual-core directly collecting and outputting the measured current and voltage to control the pulse width modulation of the IGBT;
2. The input and output of the system have high-frequency filters to prevent harmonic pollution to the power grid;
3. All A/D measurement quantities of the system are processed by DSP software algorithm, and the dynamic response capability is at least ten times higher than that of traditional thyristor controlled CCR;
4. Remote control and monitoring are realized by switching value, single or double CAN, single or double Rs485;

Main Interface



- A area function: local/remote control switch button;
- B area function: CCR brightness level on and off button;
- C area function: CCR brightness level on and off button;
- D area function: display the status of CCR output series circuit and the operation of equipment, once there is an alarm message, the "normal" button will be displayed in red; meanwhile, you can directly click the "normal" button to view the corresponding detailed malfunction information ;
- E area function: display the current Rms value of the current brightness level of CCR;
- F area function: display the voltage Rms value of the current brightness level of CCR;
- G area function: display the current position of CCR;
- H zone function: CCR function, parameter setting button;

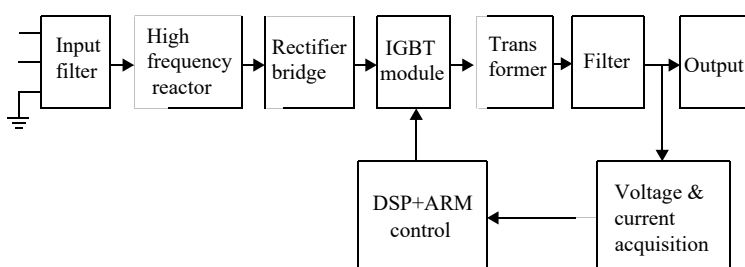
Type

Brightness	CCR current (A)		
	Type 1	Type 2	Type 3
1	4.8	2.8	Customize
2	5.5	3.4	
3	6.6	4.1	
4	—	5.2	
5	—	6.6	

*Different levels of current can be set according to customer requirements

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System Structure



CCR-I

IGBT Sine Wave Constant Current Regulator

Rated Capacity

Output current (A)	Max. effective value output voltage (V)	Rated Power (KVA)
6.6	151	1
6.6	378	2.5
6.6	757	5.0
6.6	1136	7.5
6.6	1515	10
6.6	2272	15
6.6	3030	20
6.6	3788	25
6.6	4545	30

Technical Parameters

Environmental Conditions

- The applicable temperature range: 0°C--55°C;
- The applicable altitude range is 0-2000 meters (we can provide products with an altitude of 2000-5000 meters according to customer requirements);
- The applicable humidity range is $\leq 95\%$ (no condensation);

Input voltage level

- Single-phase input voltage 220VAC $\pm 10\%$, frequency 50Hz $\pm 2.5\text{Hz}$;
- Single-phase input voltage 380VAC $\pm 10\%$, frequency 50Hz $\pm 2.5\text{Hz}$;
- Single-phase input voltage 208VAC $\pm 10\%$, frequency 60Hz $\pm 2.5\text{Hz}$;

Remote Control

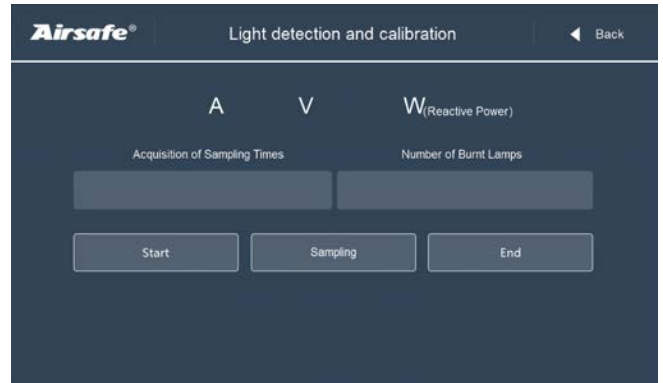
- Multi-wire switch voltage supports 24VDC;
 - Support dual RS485 bus communication;
 - Support dual CAN bus communication;
- *Remote monitoring interface and protocol can be customized according to customer requirements

Additional options

Lighting Fixtures Failure Detection

As an optional accessory, LFD can accurately and real-time detect the number of lamps burned out in the series load circuit and display on CCR display interface.

- The number of failed lighting fixtures is less than 10% of the total number, and the accuracy is less than 1%;
- The number of failed lighting fixtures is within 10% to 30% of the total number, and the accuracy is less than 2%;

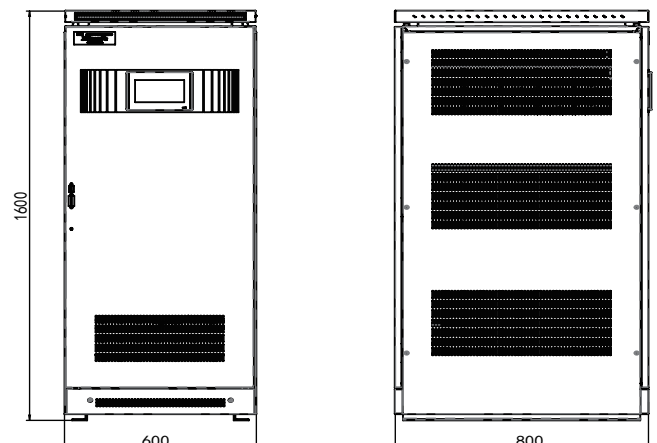


Ground Resistance Detection

As an optional accessory, EFD can detect the insulation resistance between the cable core of the series load loop and the ground regardless of whether CCR is on or off;

- The insulation resistance test range can reach 10K Ω -2G Ω ;
- The grounding resistance preset warning and alarm can be set on the display interface. If the detected insulation resistance value is lower than the warning or alarm limit, the information will be displayed on the dimmer interface;

Dimension

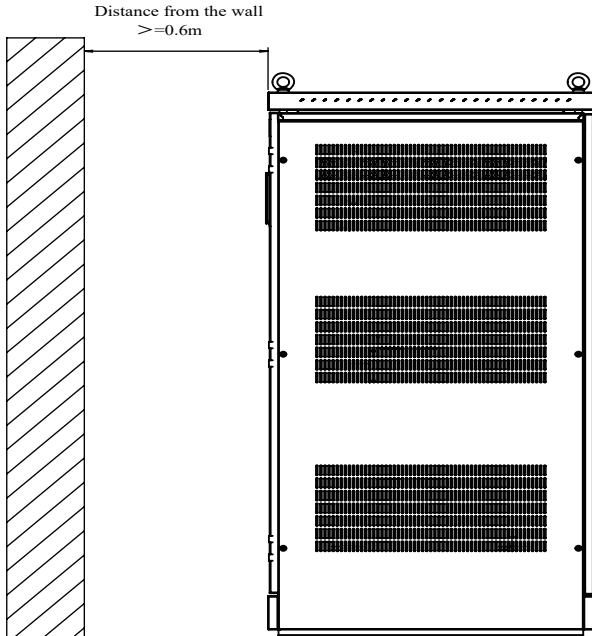


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■ CCR-I

■ IGBT Sine Wave Constant Current Regulator

Installation Requirement



Packing Data

Rated Power (KVA)	Dimension(mm) L*W*H	Net Weight (Kg)	Gross Weight (Kg)
1	650x850x1700	200	230
2.5	650x850x1700	240	270
5.0	650x850x1700	280	310
7.5	650x850x1700	320	350
10	650x850x1700	360	390
15	650x850x1700	400	430
20	650x850x1700	440	470
25	650x850x1700	480	510
30	650x850x1700	520	550

Accessories Order

Component Name	Sub-component Name	Ordering No.	Suggested Qty	Applied to
Main Contactor	AC contactor 40	485A7	1	5-10KVA
	AC contactor 65	485AP	1	15-20KVA
	AC contactor 96	485AQ	1	25-30KVA
Air Switch	Air isolation switch 32A	485AL	1	5-10KVA
	Air isolation switch 40A	485A6	1	15KVA
	Air isolation switch 63A	485AM	1	20KVA
	Air isolation switch 80A	485AN	1	25KVA
	Air isolation switch 125A	485AO	1	30KVA
Lightning Arrester	HMYGS-3/9.9	485AF-10	2	5-10KVA
	HMYGS-5/13.6	485AF-14	2	15-20KVA
	HMYGS-6/19.8	485AF-20	2	25-30KVA
Filter Capacitor	SRP-450-37-MS	485AA	4	All types
	STM-1200V-0.22uF	485AK	3	5KVA
	STM-850-2uF	485A8	3	5-10KVA
	STM-850-3uF	485A9	3	15-20KVA
	STM-850-5uF	485AU	3	25-30KVA
	STM-700-3uF	485AT	4	5-20KVA
	STM-700-5uF	485AS	4	All types

Spare Parts

Components Order

S/N	Name	Ordering No.	Suggested Qty
1	IGBT module	485AC	2
2	IGBT driver board	7911K	2
3	Main control board	791AA	1
4	FAA Monitoring board	791AF	1
5	Voltage and current acquisition board	791AC-1	1
6		791AC-2	1
7		791AC-3	1
8	Rectifier bridge	485AB	2
9	Rectifier bridge	485AC	2
10	Current sensor board	791AB	1
11	Power lightning protection module	485A5	2
12	Fuse	791AG	4
13	Switching power supply-15	7914J	1
14	Switching power supply-12	7914K	1
15	Power Transformer	4663U	1

Other Accessories

Item	Name	Ordering No.	Suggested Qty
1	Insulation detection board	791AE	1

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■ IGBT Sine Wave Constant Current Regulator

Order Information

CCR - I - X1 - X2 - X3 - XX4 - X5 - X6

Character 1	X1:Type		
Abbreviation	1	2	3
Description	Brightness level 3	Brightness level 5	customize

Character 2	X2:Rated Capacity								
Abbreviation	010	025	050	075	100	150	200	250	300
Description	1KVA	2.5KVA	5KVA	7.5KVA	10KVA	15KVA	20KVA	25KVA	30KVA

Character 3	X3:Input Voltage		
Abbreviation	220A	380A	208B
Description	220V 50HZ	380V 50HZ	208V 60HZ

Character 4	XX4:Remote Monitoring					
Abbreviation	Multi-wire			Connector		
Description	0	A	B	0	A	B
	None	Signal Switch	24V	None	Dual RS-485	Dual CAN

Character 5	X5:Output Accessories		
Abbreviation	0	A	B
Description	None	Breaker	Loop selector switch

Character 6	X6:Other Options	
Abbreviation	0	1
Description	None	EFD/LFD

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