

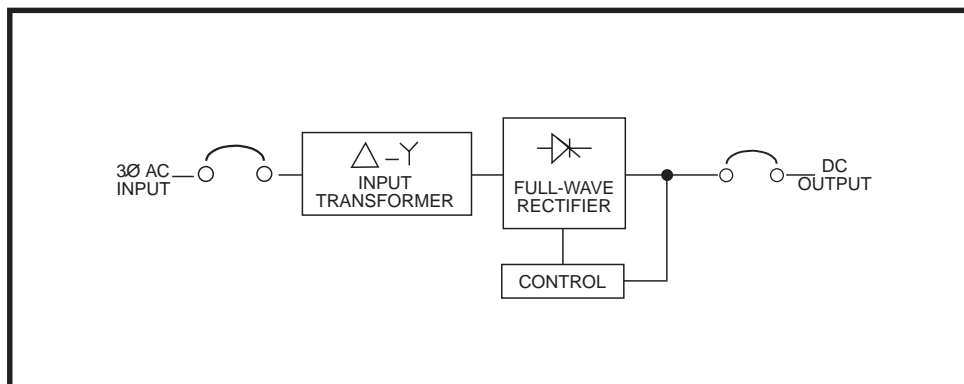
## Battery Charger Systems 110, 130 VDC 220, 260 VDC 50 Amps to 600 Amps



- ◆ High reliability - exceeds 140,000 hours (16 years) MTBF
- ◆ Phase-controlled six SCR topology
- ◆ Low audible noise
- ◆ Maintains DC voltage regulation at  $\pm 0.5\%$  on float
- ◆ Long life LED indicators
- ◆ Output is maintained even with the loss of one phase input – insensitive to phase rotation
- ◆ Industrial grade – built to operate in extreme environments
- ◆ Vacuum impregnated magnetics with 200°C epoxy insulation
- ◆ All components are front accessible – no side or back clearance required
- ◆ Lighted mimic panel display
- ◆ High efficiency-greater than 90%

The RCS *Plus* Battery Chargers are thyristor-based systems designed for high efficiency conversion of incoming commercial AC to DC power for charging large banks of station batteries, while supplying power to continuous DC loads, such as Inverters.

The Battery Charger is intended for use in UPS systems, as well as a stand-alone device for battery charging only applications.



**Battery Charger Block Diagram**

## AC Input

Voltages:	208, 220, 380, 415 & 480 VAC/3-phase, 3 wire
Range:	+10, -10% for 1% output regulation
Range:	+10, -15% without discharging batteries
Frequency:	50 or 60 Hz $\pm 5\%$

## DC Output

Float Voltage:	122, 135, 244, 270 $\pm 5\%$ adjustment
Equalize Voltage:	126, 140, 252, 280 $\pm 5\%$ adjustment
Regulation (Float):	$\pm 0.5\%$
Regulation (Equalize):	$\pm 1.0\%$
Ripple:	<2% RMS with battery connected per NEMA PE-5
Current Limit:	Factory set at 115%, adjustable from 50-115%

## Conversion Efficiencies

AC-DC:	90-95% depending on capacity
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## Environmental

Ambient Temp.:	0°C to 40°C (50°C optional)
Relative Humidity:	0-95% non-condensing
Operating Altitude:	0 to 2500 meters (8300 ft.) (at 25°C ambient temperature)
Audible Noise:	<60 dB(A) at 1 meter

## Cable Entry

Bottom (front) via removable plate (one per bay)  
Top or side entry, consult factory

## Controls

Float/Equalize Push buttons  
0-100 Hr Equalize Timer, manual start, auto reset  
Float Voltage Potentiometer on Front Panel  
Equalize Voltage Potentiometer on Front Panel

## Standard Features

### Circuit Breakers

AC Input:	3 pole molded case (Rated 14 KAIC)
DC Output:	2 pole* molded case (Rated 10 KAIC)
* Nominal 260 VDC units use a 3 pole breaker	

### Meters (2% Panel type)

DC Output Voltmeter  
DC Output Ammeter

### Cabinet

NEMA-1 (IP-20)

## Standard Features (cont'd)

### Indicators and Alarms

Low DC Voltage\*\*  
AC Available\*  
Fan Failure (when required)\*  
Common (Summary) Alarm\*\*

\*Indicating light only

\*\*Alarms supplied with one SPDT contact rated for 3 Amps at 120 VAC

## Optional Features

### Meters

AC Input Voltmeter (1 meter w/switch)  
AC Input Ammeter (1 meter w/switch)

### Alarm Indicators (LED only)

Alarm Indicators Package  
Option Package "A"  
- Positive to Ground  
- Negative to Ground  
- Over Temperature  
- Charger Failure  
Option Package "B"  
- High DC Voltage  
- AC Power Failure  
Option Package "C"  
- Charger Fuse Blown  
- Low AC Input Voltage

### Additional Optional Features

- Audible Alarm with silence pushbutton
- Latching Alarm w/reset
- Lamp test pushbutton
- 0.1% DC Ripple Filtering
- High Interrupt AC/DC Breakers
- SPDT contact for each alarm
- Blocking Diode

### Cabinet Options

Optional NEMA-12 (IP31)  
Top-Mounted Dripshield  
Fungus/Moisture Spray  
Vermin Screens

Contact factory for additional options

# General Specifications

# RCS *Plus*

## 130 VDC OUTPUT

Model	Output Amps	DC Volts	AC/DC % EFF	3Ø AC Input/Frequency <sup>1</sup>				Cabinet Style	Heat Loss (Watts)	Circuit Breaker Ampacity				Weight <sup>2</sup>		
				AC Amperes/Phase						DC Output	Main AC Input					
				208/60	480/60	380/50	415/50				208/60	480/60	380/50	415/50	Lbs.	Kg.
RCS12050U-*	50	130	91	33	14	18	16	D	642	80	50	20	25	25	615	220
RCS12075U-*	75	130	91	49	21	27	25	D	964	125	70	30	35	35	720	348
RCS12100U-*	100	130	92	65	28	35	32	D	1130	150	90	40	50	50	765	348
RCS12150U-*	150	130	93	96	42	53	48	D	1468	225	125	60	70	70	940	426
RCS12200U-*	200	130	93	128	56	70	64	D	1957	300	175	70	90	90	1255	569
RCS12300U-*	300	130	94	190	82	104	95	E	2489	450	250	110	150	125	1535	696
RCS12400U-*	400	130	95	251	109	137	126	G	2737	600	350	150	175	175	1720	780
RCS12500U-*	500	130	95	314	136	172	157	G	3421	800	400	175	225	200	1950	885
RCS12600U-*	600	130	95	376	163	206	189	H	4105	900	500	225	300	250	2565	1163

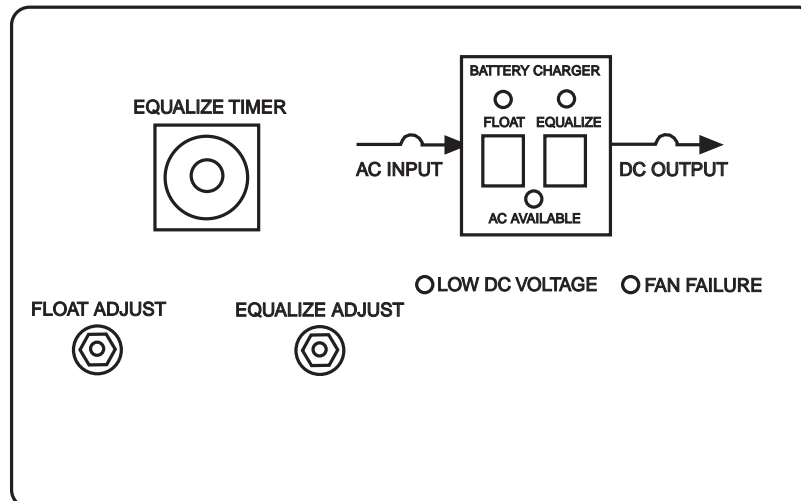
## 260 VDC OUTPUT

RCS25050U-*	50	260	91	65	28	36	33	D	1286	80	90	40	50	50	740	336
RCS25075U-*	75	260	91	98	43	54	49	D	1929	125	125	60	70	70	940	426
RCS25100U-*	100	260	92	130	56	71	65	D	2261	150	175	80	90	90	975	442
RCS25150U-*	150	260	93	192	83	105	96	D	2935	225	250	110	150	125	1365	619
RCS25200U-*	200	260	93	256	111	140	128	D	3914	300	350	150	200	175	1955	887
RCS25300U-*	300	260	94	380	165	208	191	G	4979	450	500	225	300	250	2680	1215
RCS25400U-*	400	260	95	502	217	275	251	G	5474	600	700	300	350	350	2960	1345
RCS25500U-*	500	260	95	627	272	343	314	H	6842	800	800	350	450	400	3535	1603

<sup>1</sup>At Nominal Line & Current Limit

<sup>2</sup>Weight of 60 Hz units, 50 Hz 7% more

\*NOTE: See next page for model number configuration



**Lighted Mimic Panel Block Diagram**

# General Specifications

# RCS *Plus*

## 110 VDC OUTPUT

Model	Output Amps	DC Volts	AC/DC % EFF	3Ø AC Input/Frequency <sup>1</sup>				Cabinet Style	Heat Loss (Watts)	Circuit Breaker Ampacity					Weight <sup>2</sup>	
				AC Amperes/Phase						DC Output	Main AC Input					
				208/60	480/60	380/50	415/50				208/60	480/60	380/50	415/50	Lbs.	Kg.
RCS12050U*	50	110	91	28	12	15	14	D	544	80	35	20	20	20	615	280
RCS12075U*	75	110	91	42	18	23	21	D	816	125	60	25	30	30	720	327
RCS12100U*	100	110	92	56	24	30	28	D	957	150	70	30	40	35	765	348
RCS12150U*	150	110	93	82	36	45	41	D	1242	225	125	50	60	60	940	427
RCS12200U*	200	110	93	110	48	60	55	D	1656	300	150	60	80	70	1255	570
RCS12300U*	300	110	94	163	71	89	82	E	2106	450	225	90	125	110	1535	698
RCS12400U*	400	110	95	215	93	118	108	G	2316	600	300	125	150	150	1720	782
RCS12500U*	500	110	95	269	117	147	135	G	2895	800	350	150	200	175	1950	886
RCS12600U*	600	110	95	323	140	177	162	H	3474	900	450	125	225	225	2565	1166

## 220 VDC OUTPUT

RCS25050U*	50	220	91	56	24	31	28	D	1088	80	70	30	40	35	740	336
RCS25075U*	75	220	91	84	36	46	42	D	1632	125	125	50	60	60	940	427
RCS25100U*	100	220	92	111	48	61	56	D	1913	150	150	60	80	70	975	443
RCS25150U*	150	220	93	165	71	90	83	D	2484	225	225	90	125	125	1365	620
RCS25200U*	200	220	93	220	95	120	110	D	3312	300	300	125	150	150	1955	889
RCS25300U*	300	220	94	326	141	179	164	G	4213	450	450	200	225	225	2680	1218
RCS25400U*	400	220	95	431	187	236	216	G	4632	600	600	250	300	300	2960	1345
RCS25500U*	500	220	95	538	233	295	270	H	5789	800	700	300	400	350	3535	1607

<sup>1</sup> At Nominal Line & Current Limit

<sup>2</sup> Weight of 60 Hz units, 50 Hz 7% more

\*A complete Battery Charger model number includes the AC input voltage, DC output voltage and input frequency. To "build" a model number, use the "code" in the matrix shown below.

Model Number: RCS12100U-XX-YY-AA

where XX=AC Input Voltage  
YY=DC Output Voltage  
AA=Input Frequency

AC Input Volts	Code	DC Output Volts	Code	Input Frequency	Code
208	20	110	11	60	60
480	48	130	13	50	50
380	38	220	22		
415	41	260	26		

Example: A 300 Amp Battery Charger with 480 Volt, 60 Hz input; 220 VDC output; Model No. RCS25300U-48-22-60. If voltage code is not listed simply place a "C" after the "U". Example: Model No RCS25300UC

Consult your local Solidstate Controls representative or the factory if you have any questions.

Specifications subject to change without notice

Cabinet Dimensions					
Cabinet Style	Inches (mm)				
	H	x	W	x	D
A	78 (1981)	x	29 x 737	x	36 (914)
D	57 (1448)	x	29 x 737	x	28 (711)
E	78 (1981)	x	29 x 737	x	32 (813)
G	85 (2159)	x	29 x 737	x	36 (914)
H	85 (2159)	x	56 x 1422	x	36 (914)

Certain optional features and/or combinations may require larger cabinets. Contact factory.



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