

BCR Battery Charger

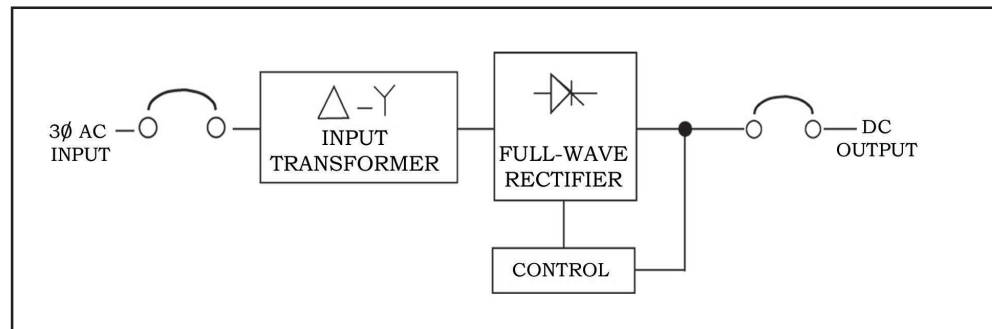
BCR Battery Charger Systems 110, 130 VDC 220, 260 VDC 50 Amps to 600 Amps



- ◆ 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 BCR Battery Chargers from AMETEK Solidstate Controls 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 BCR 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:	2.25 VPC for lead-acid batteries; \pm 5% adjustment
Equalize Voltage:	2.33 VPC for lead-acid batteries \pm 5% adjustment
Regulation (Float):	\pm 0.5%
Regulation (Equalize):	\pm 1.0%
Ripple:	<2% RMS with battery connected per NEMA PE-5, 1996
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:	60-65 dB(A) @ 1.5m typical
Addition of drip shield may increase the noise by 1-3dB (A)	

Cable Entry

Top or Bottom

Controls

Float/Equalize Push buttons w/indicators
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)
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)

Indicators and Alarms

Low DC Voltage**
Fan Failure (light only)
AC Available (light only)
Common (Summary) Alarm**

**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)
DC Ground Detect Meter and Switch

Optional Features (con't)

Digital Meters (Note: Selecting this option, provides **ALL** digital meters)

Alarm Indicators

Alarm Packages (Package includes alarm and LED):

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

Option Package "D"

- Adds form "C" contacts to all standard and optional alarms

Option Package "E"

- DC Output Breaker Open
- AC Input Breaker Open

Option Package "F"

- High DC Disconnect
- End of Discharge

Option Package "H"

- Charger Available
- Charger Overload

Additional Optional Features

- Audible Alarm with silence pushbutton
- Latching Alarm w/reset
- Lamp test pushbutton
- Alarm test
- Blocking Diode for parallel charger operation
- Charger Output (AC ripple) filter
- Twelve (12) Pulse design to reduce reflected harmonics to \leq 10%
- DC rated alarm contacts
- 65 KAIC AC Input Breaker
- 20 KAIC DC Output Breaker
- Space heater w/thermostat and circuit breaker
- Reverse Polarity Indicator
- Auto-Equalize Timer
- Pad-lockable breakers

Cabinet Options

Top-Mounted drip shield
Fungus/Moisture Spray
Vermin Screens
Lifting eye bolts
20% spare terminals
Conformal Coating of PC Boards
Contact factory for additional options

130 VDC OUTPUT

Model	Output Amps	DC Volts	AC/DC % EFF	3Ø AC Input/Frequency ¹				Cabinet Style	Heat Loss (Watts)	Circuit Breaker Ampacity				Weight ²		
				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.
BCR12050-*	50	130	91	33	14	18	16	GTDIX	642	80	50	20	25	25	615	280
BCR12075-*	75	130	91	49	21	27	25	GTDIX	964	125	70	30	35	35	654	297
BCR12100-*	100	130	92	65	28	35	32	GTDIX	1130	150	90	40	50	50	710	322
BCR12150-*	150	130	93	96	42	53	48	GTDIX	1468	225	125	60	70	70	791	358
BCR12200-*	200	130	93	128	56	70	64	GTDIX	1957	300	175	70	90	90	943	428
BCR12300-*	300	130	94	190	82	104	95	GTDIX	2489	450	250	110	150	125	1296	588
BCR12400-*	400	130	95	251	109	137	126	GTDIXF ³	2737	600	350	150	175	175	1453	659
BCR12500-*	500	130	95	314	136	172	157	GTDIXF ³	3421	800	400	175	225	200	1972	894
BCR12600-*	600	130	95	376	163	206	189	GTDIXF ³	4105	900	500	225	300	250	2192	994

260 VDC OUTPUT

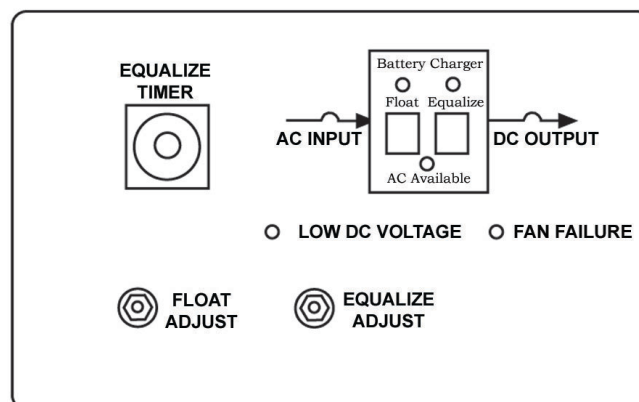
BCR25050-*	50	260	91	65	28	36	33	GTDIX	1286	80	90	40	50	50	672	305
BCR25075-*	75	260	91	98	43	54	49	GTDIX	1929	125	125	60	70	70	734	333
BCR25100-*	100	260	92	130	56	71	65	GTDIX	2261	150	175	80	90	90	844	383
BCR25150-*	150	260	93	192	83	105	96	GTDIX	2935	225	250	110	150	125	1033	469
BCR25200-*	200	260	93	256	111	140	128	GTDIX	3914	300	350	150	200	175	1442	65
BCR25300-*	300	260	94	380	165	208	191	GTDIXF	4979	450	500	225	300	250	1703	772
BCR25400-*	400	260	95	502	217	275	251	GTDIXF ³	5474	600	700	300	350	350	1870	848
BCR25500-*	500	260	95	627	272	343	314	GTDIXF ³	6842	800	800	350	450	400	2919	1324

¹At Nominal Line & Current Limit

²Weight of 60 Hz units; 50 Hz 7% more
12-pulse designs are 7% heavier....contact the factory

³Consult factory for cabinet dimensions on 50 Hz design

*NOTE: See next page for model number configuration



Lighted Mimic Panel Block Diagram

General Specifications

BCR

110 VDC OUTPUT

Model	Output Amps	DC Volts	AC/DC % EFF	3Ø AC Input/Frequency ¹				Cabinet Style	Heat Loss (Watts)	Circuit Breaker Ampacity				Weight ²		
				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.
BCR12050-*	50	110	91	28	12	15	14	GTDIX	544	80	35	20	20	20	615	280
BCR12075-*	75	110	91	42	18	23	21	GTDIX	816	125	60	25	30	30	654	297
BCR12100-*	100	110	92	56	24	30	28	GTDIX	957	150	70	30	40	35	710	322
BCR12150-*	150	110	93	82	36	45	41	GTDIX	1242	225	125	50	60	60	791	358
BCR12200-*	200	110	93	110	48	60	55	GTDIX	1656	300	150	60	80	70	943	428
BCR12300-*	300	110	94	163	71	89	82	GTDIX	2106	450	225	90	125	110	1296	588
BCR12400-*	400	110	95	215	93	118	108	GTDIXF ³	2316	600	300	125	150	150	1453	659
BCR12500-*	500	110	95	269	117	147	135	GTDIXF ³	2895	800	350	150	200	175	1972	894
BCR12600-*	600	110	95	323	140	177	162	GTDIXF ³	3474	900	450	125	225	225	2192	994

220 VDC OUTPUT

BCR25050-*	50	220	91	56	24	31	28	GTDIX	1088	80	70	30	40	35	672	305
BCR25075-*	75	220	91	84	36	46	42	GTDIX	1632	125	125	50	60	60	734	333
BCR25100-*	100	220	92	111	48	61	56	GTDIX	1913	150	150	60	80	70	844	383
BCR25150-*	150	220	93	165	71	90	83	GTDIX	2484	225	225	90	125	125	1033	469
BCR25200-*	200	220	93	220	95	120	110	GTDIX	3312	300	300	125	150	150	1442	654
BCR25300-*	300	220	94	326	141	179	164	GTDIXF	4213	450	450	200	225	225	1703	772
BCR25400-*	400	220	95	431	187	236	216	GTDIXF ³	4632	600	600	250	300	300	1870	848
BCR25500-*	500	220	95	538	233	295	270	GTDIXF ³	5789	800	700	300	400	350	2919	1324

¹At Nominal Line & Current Limit

²Weight of 60 Hz units; 50 Hz 7% more

12-pulse designs are 7% heavier....contact the factory

³Consult factory for cabinet dimensions on 50 Hz design

*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: BCR12100T-XX-YY-AA

where T=12 pulse design
XX=AC Input Voltage
YY=DC Output Voltage
AA=Input Frequency

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

Example: A 12-pulse, 300 Amp Battery Charger with 480 Volt, 60 Hz input; 220 VDC output: Model No. BCR25300T-48-22-60. If voltage code is not listed simply place a "C" at the end of the model #. Example: Model No BCR25300TC

Specifications subject to change without notice

Cabinet Dimensions

Cabinet Style	Inches (mm)				
	H	x	W	x	D
GTDIX	79 (2007)	x	32 813	x	36 914
GTDIXF	86 (2184)	x	32 813	x	36 914

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

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



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