



KUSSMAUL

ELECTRONICS CO., INC.

BATTERY CHARGERS



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AUTO CHARGE® 1000

SINGLE BATTERY SYSTEM AUTOMATIC BATTERY CHARGER & POWER SUPPLY



10 ELEMENT, WATERPROOF BAR GRAPH DISPLAY

18 AMPS
@ 12 VOLTS



MODEL 091-56-12

18 AMPS TOTAL OUTPUT

CHARGES SINGLE BATTERY SYSTEM

BUILT-IN 3 AMP BATTERY SAVER

NO WATER BOIL-OFF

RUGGED CONSTRUCTION FOR VEHICLE MOUNTING

The Auto Charge 1000 is a high output automatic battery charger. Unique electronic sensing circuits sense the true battery voltage while eliminating the need for external sense wires. Charging is completely automatic. The maximum output of the charger is 15 amperes. When the battery is fully charged, all charging stops. There is no overcharging and no water boil-off.

A common problem with electrical systems is the loading on the battery caused by rechargeable hand lights, portable radios and other loads. The Auto Charge 1000 handles these loads with a built-in BATTERY SAVER. Auxiliary electrical loads are connected to the BATTERY SAVER output. During normal vehicle operation these auxiliary loads are connected to the battery. When the vehicle is plugged in to A.C. power, the auxiliary loads are automatically removed from the battery and powered from the BATTERY SAVER circuit. A maximum of 3 amperes is available from the BATTERY SAVER. An automatic overload protector limits the 3 ampere output. A yellow overload indicator is illuminated whenever the BATTERY SAVER output limit is exceeded.

The Auto Charge 1000 indicator may be mounted

remotely from the charger assembly. Connected by 3 wires to the charger, the indicator contains a bar graph display. The display indicates the "state of charge" and the general condition of the battery. An old or defective battery is displayed as a low reading which remains low after an extended charging period. A discharged battery also is indicated by a low reading. Precise indications of battery condition appear, independent of the distance between the charger and the display.

SPECIFICATIONS:

Input: 120 volt, 50/60 Hz, 3.5 amperes

Charger Output: 12 Volts, D.C., Output Current: 15 amperes maximum

Voltage Sense: Remote, electronic, no sense wires required

Battery Saver: Output Voltage: 12 Volts, D.C. Output Current: 3 amperes maximum

Power Indicator: Indicates input power applied.

Battery Saver Overload Indicator: Indicates Battery Saver load exceeds 3 amperes.

Charger Output Indicator: Remotely located bar graph display, indicates state of charge & condition of battery.

Weight: 16 pounds

Warranty : 3 Years

Outline Drawing: 004

Note: For loads that do not tolerate ripple, see our engineering dept.

AUTO CHARGE® 1200

HIGH OUTPUT AUTOMATIC BATTERY CHARGER

FULLY AUTOMATIC

HEAVY DUTY 40 AMP OUTPUT

REMOTE ELECTRONIC VOLTAGE SENSING: NO SENSE WIRES REQUIRED

CURRENT LIMITED OUTPUT

NO WATER BOIL-OFF

CANNOT OVERCHARGE BATTERY

40 AMPS
@ 12 VOLTS



MODEL 091-53-12
WITH BUILT IN INDICATOR



MODEL 091-53-12-REMOTE
WITH EXTERNAL INDICATOR

The Auto Charge 1200 and Auto Charge 1200 Remote are fully automatic battery chargers with a very high output for vehicles with a single battery system. Remote voltage sensing is provided to compensate the charger output for the voltage drop in the charging wires. No sense lead wires are required. It is ruggedly constructed for mounting in the vehicle. May be used for positive and negative ground systems.

SPECIFICATIONS:

Input : 120 volts 60 Hz, 10 amps

Output : 12 volts DC

Output Current : 40 amps max.

Charge Indicator : Indicates battery charge level on a bar graph display

Weight : 21 lbs

Warranty : 3 Years

Outline Drawing: 002

Section 1: Single Battery Systems



AUTO CHARGE[®] 11

STANDARD DUAL SYSTEM CHARGER

10 AMPS
@ 12 VOLTS



AUTOMATICALLY CHARGES BATTERIES

DUAL INDEPENDENT CHARGER

EACH BATTERY IS SENSED & CONTROLLED INDIVIDUALLY

AMMETER INDICATES TOTAL OUTPUT

NO WATER BOIL-OFF, CANNOT OVERCHARGE BATTERY

The Auto Charge 11 is a fully automatic battery charger for vehicles with dual battery systems. This new and improved unit contains two completely independent chargers to sense and control the current to the batteries. Thus parasitic loads on one battery have no effect on the second battery. Total output current is limited to protect the charger but may be supplied to either battery if the adjacent battery does not require it. Normally the current output is proportioned between the two batteries as required. An output is provided to permit the installation of the optional remote displays. The remote displays are not required for the operation of the charger but they permit customizing the individual installation.

SPECIFICATIONS:

- Input Current:**
2.5 amp @ 120v
1.3 amp @ 230v max
- Output Current:** see chart
- Charge Indicator:** 0-15 amps
- Weight:** 12 lbs
- Warranty :** 3 Years
- Outline Drawing:** see chart

ORDERING INFORMATION						
Model#	Ouput Voltage	Output Amps	Input Voltage	Option	OUTLINE DRAWING	Optional Indicator
091-11-6	6	11	120 V.A.C.	none	001	NO
091-11-12	12	10	120 V.A.C.	none	030	YES
091-11-24	24	6	120 V.A.C.	none	030	YES
091-11DV-6	6	11	120 or 230 V.A.C.	DV	001	NO
091-11DV-12	12	10	120 or 230 V.A.C.	DV	030	YES
091-11DV-24	24	6	120 or 230 V.A.C.	DV	030	YES
091-11PIM	12	10	120 V.A.C.	PIM	001	NO

Note: 091-11-12 is UL listed

AVAILABLE OPTIONS

DUAL VOLTAGE INPUT

DV option

Provides a built in switch which lets you choose between 120 VAC or 230 VAC



AC POWER PROTECTION

PIM option

Provides a circuit breaker & Ground Fault protected outlet for accessories



OPTIONAL INDICATOR

BAR GRAPH option



MODEL 091-11-127

Provides a remote display

OPTIONAL INDICATOR

LED option

Provides a low cost remote display



MODEL 091-11-102-12



AUTO CHARGE® 2000

DUAL BATTERY SYSTEM AUTOMATIC BATTERY CHARGER & POWER SUPPLY



10 ELEMENT, WATERPROOF BAR GRAPH DISPLAY



18 AMPS
@ 12 VOLTS

MODEL 091-39-12

18 AMPS TOTAL OUTPUT

CHARGES DUAL BATTERY SYSTEM

BUILT-IN 3 AMP BATTERY SAVER

NO WATER BOIL-OFF

RUGGED CONSTRUCTION FOR VEHICLE MOUNTING

The Auto Charge 2000 is a high output dual battery charger that independently charges two banks of batteries. Unique electronic sensing circuits sense the true battery voltage while eliminating the need for external sense wires. Charging is completely automatic. The maximum output of the charger is 15 amperes. The entire 15 amperes may be supplied to one battery or it may be divided between the two batteries. The lower charged battery is favored to receive more of the charge. When the two batteries are equally charged the charge is divided equally. When the batteries are fully charged, all charging stops. There is no overcharging and no water boil-off.

A common problem with electrical systems is the loading on the battery caused by rechargeable hand lights, portable radios and other loads. The Auto Charge 2000 handles these loads with a built-in "BATTERY SAVER". Auxiliary electrical loads are connected to the "BATTERY SAVER" output. During normal vehicle operation these auxiliary loads are connected to battery #1. When the vehicle is plugged in to A.C. power, the auxiliary loads are automatically removed from the battery and powered from the "BATTERY SAVER" circuit. A maximum of 3 amperes is available from the "BATTERY SAVER". An automatic overload protector limits the 3 ampere output. A yellow overload indicator is illuminated whenever the "BATTERY SAVER" output limit is exceeded.

The Auto Charge 2000 indicator may be mounted remotely from the charger assembly. Connected by 4 wires to the charger, the indicator contains 2 bar graph displays - one for each battery. The displays indicate the "state of charge" and the general condition of the batteries. An old or defective battery is displayed as a low reading which remains low after an extended charging period. A discharged battery also is indicated by a low reading. Precise indications of battery condition appear, independent of the distance between the charger and the display.

SPECIFICATIONS:

Input: 120 volts, 50/60 Hz, 3.5 amps

Voltage Sense: Remote, electronic, no sense wires required.

Output:

Battery Charger: two, 12 volts DC @ 15 amps total

Battery Saver: 12 volts DC @ 3 amps

Indicators:

Power- indicates input power applied

Battery Saver- indicates Battery Saver load exceeds 3 amps.

Bar Graph- remotely located indicates state of charge of batteries

Weight: 16 pounds

Warranty: 3 Year

Outline Drawing: 004

Note: For loads that do not tolerate ripple, see our engineering dept.



DELUXE AUTOMATIC BATTERY CHARGER

AUTO CHARGE® 4000

DUAL HIGH OUTPUT BATTERY SYSTEM AUTOMATIC BATTERY CHARGER & POWER SUPPLY

45 AMPS
@ 12 VOLTS



MODEL 091-89-12

The Auto Charge 4000 is a high output dual battery charger that independently charges two banks of batteries. Unique electronic sensing circuits sense the true battery voltage while eliminating the need for external sense wires. Charging is completely automatic. The maximum output of the charger is 40 amperes. The entire 40 amperes may be supplied to one battery or it may be divided between the two batteries. The lower charged battery is favored to receive more of the charge. When the two batteries are equally charged the charge is divided equally. When the batteries are fully charged, all charging stops. There is no overcharging and no water boil-off.

A common problem with electrical systems is the loading on the battery caused by rechargeable hand lights, portable radios and other loads. The Auto Charge 4000 handles these loads with a built-in "BATTERY SAVER". Auxiliary electrical loads are connected to the "BATTERY SAVER" output. During normal vehicle operation these auxiliary loads are connected to battery #1. When the vehicle is plugged in to A.C. power, the auxiliary loads are automatically removed from the battery and powered from the "BATTERY SAVER" circuit. A maximum of 5 amperes is available from the "BATTERY SAVER".



10 ELEMENT, WATERPROOF
BAR GRAPH DISPLAY

DUAL INDEPENDENT AUTOMATIC BATTERY CHARGER

40 AMPERES FOR VEHICLE BATTERIES

5 AMPERE BATTERY SAVER

ELECTRONIC REMOTE BATTERY SENSING

INDEPENDENT CONTROL, NO INTERACTION BETWEEN TWO SYSTEMS

An automatic overload protector limits the 5 ampere output. A yellow overload indicator is illuminated whenever the "BATTERY SAVER" output limit is exceeded.

SPECIFICATIONS:

Input: 120 volts, 50/60 Hz, 8 amps

Output: Outputs, two, independent
Output Voltage: 12 Volts, D.C.
Output Current: 40 amps maximum.

Voltage Sense: Remote electronic, no sense wires

Battery Saver: Output volts 12 VDC
Output current 5 amps max.

Indicators: Power - indicates input power applied
Battery Saver - indicates Battery Saver load exceeds 5 amps.

Bar Graph - dual bar graph, remotely located indicates state of charge of batteries

Weight: 24 pounds

Warranty: 3 Years

Outline Drawing: 002

Note: For loads that do not tolerate ripple, see our engineering dept.