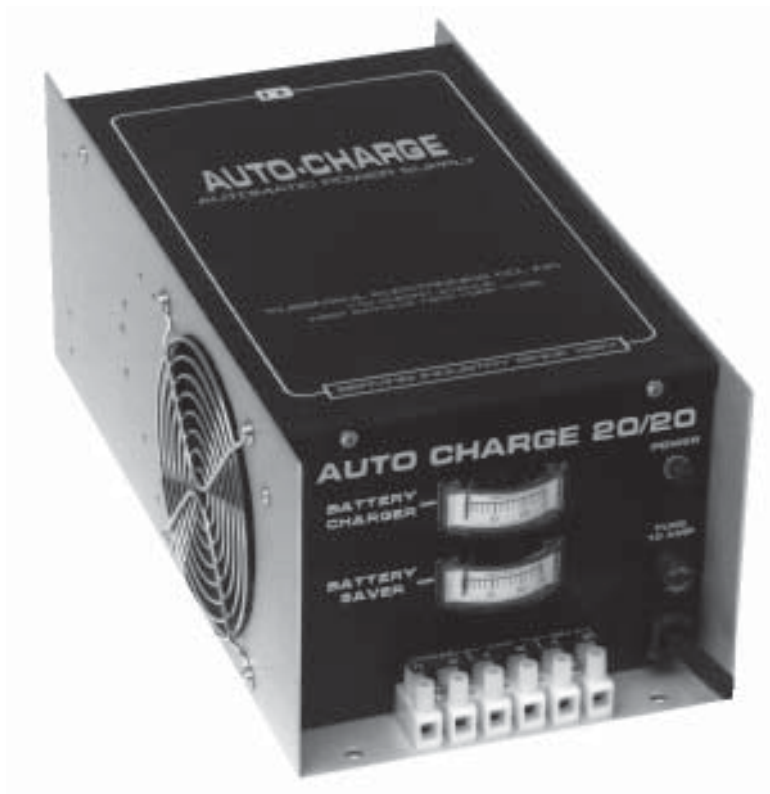


**INSTRUCTION MANUAL**

---

**AUTO CHARGE 20/20  
AUTOMATIC BATTERY CHARGER**

**MODEL #091-20/20**



**NOTE :**  
**This charger is designed for  
vehicles with a single  
battery system**

**INPUT : 115 volt, 50/60 Hz, 10amps**

**3 YEAR WARRANTY**

---



**KUSSMAUL ELECTRONICS CO., INC.**

170 CHERRY AVE., WEST SAYVILLE, N.Y. 11796

# **INTRODUCTION**

---

The Auto Charge 20/20 is a compact 20 ampere completely automatic battery charger combined with a 20 ampere Battery Saver designed for installation on vehicles with a single battery system. Remote sensing permits long lines between the charger and the batteries by compensating for the voltage drop in the charging wires. The Battery Saver provides 20 amperes of current to power 12 volt accessories whenever the vehicle is connected to A.C. power. Ammeters are provided to indicate charger and Battery Saver output currents.

Construction of the Auto Charge 20/20 is extremely rugged to withstand the shock and vibration normally encountered by vehicle mounted equipment. The unit operates completely automatically and stops charging the batteries when they are fully charged. There is no trickle charge and therefore no danger of overcharging and water boil-off. Parasitic loads from the vehicle should be connected to the Battery Saver. These loads will be connected to the battery when the vehicle is in use but are removed automatically when shore power is supplied and are then powered by the Battery Saver power supply.

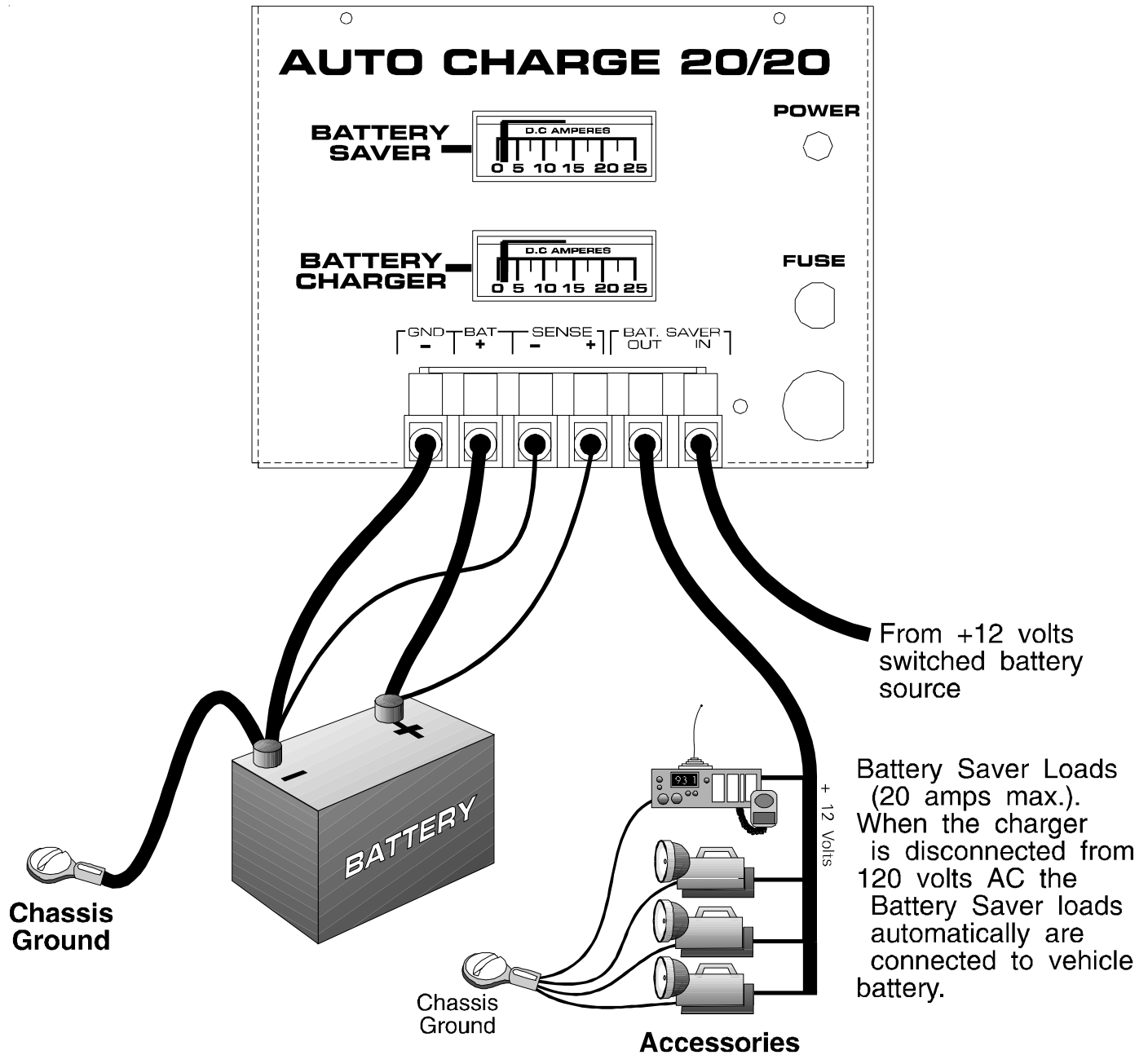
# **INSTALLATION**

---

The Auto Charge 20/20 Automatic Battery Charger should be installed in an area with adequate ventilation. A power cord is supplied for connection to 115 volts 60 Hz.

1. Mount the charger using the four holes provided for this.
2. Connect the wiring from the battery to the Output Terminal Strip.
3. Double check all wiring before proceeding.
5. Wire the A.C. power line cord to 115 volts.
6. Pilot light will light to show that the charger has power.

# INSTALLATION WIRING DIAGRAM



## WIRE SIZE CHART

CONNECTION	ITEM	DEFINITION	WIRE SIZE
<b>GROUND</b>	BATTERY NEGATIVE	NEGATIVE CHARGING LEAD FOR BATTERIES	8 AWG
<b>BAT+</b>	BATTERY POSITIVE	POSITIVE CHARGING LEAD FOR BATTERY # 1	12 AWG
<b>SENSE -</b>	NEGATIVE SENSE	NEGATIVE VOLTAGE SENSE LEAD. DETECTS VOLTAGE	16 AWG
<b>SENSE +</b>	POSITIVE SENSE	POSITIVE VOLTAGE SENSE LEAD. DETECTS VOLTAGE	16 AWG
<b>B.S. IN</b>	BATTERY SAVER	FROM +12 VOLTS SWITCHED BATTERY SOURCE	12 AWG
<b>B.S. OUT</b>	BATTERY SAVER	ACCESSORY POWER SUPPLY POSITIVE (BATTERY SAVER IN)	12 AWG

**IMPORTANT:** Wire size is for a maximum length of 20 feet. If wiring is to be longer, larger wiring is required. Additional information is available on request.

**NOTE:** The sense leads **must** be connected to the battery for the charger to operate.

# SPECIFICATION & OUTLINE

---

**Specification;**

**Input:** 120 volts, 50/60 Hz, 10 amps

**Output**

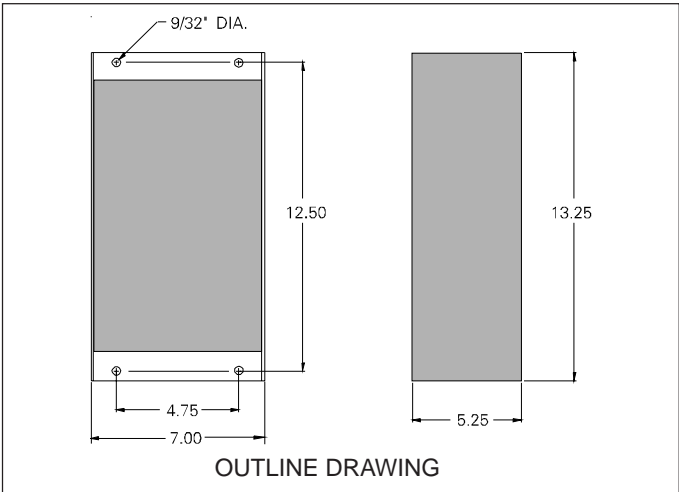
**Battery Saver:** Output volts 12 VDC  
Output current 20 amps max.

**Battery Charger:** for 12 volt battery  
Output current 20 amps max.

**Indicators:** Power - indicates input power applied  
Battery Saver - 0-25 amperes meter  
Battery Charger - 0-25 amperes meter

**Weight:** 21 pounds

**Warranty:** 3 Years



# **INSTALLATION RECORD & WARRANTY**

---

**Date Installed** \_\_\_\_\_

**Installed By** \_\_\_\_\_

**Vehicle Identification** \_\_\_\_\_

**Vehicle Owner** \_\_\_\_\_

## ***WARRANTY***

All product of Kussmaul Electronics Company Inc. are warranted to be free of defects of material or workmanship. Liability is limited to repairing or replacing at our factory, without charge, any material or defects which become apparent in normal use within 3 years from the date the equipment was shipped.

Kussmaul Electronics Company, Inc. shall have no liability for damages of any kind to associated equipment arising from the installation and /or use of the Kussmaul Electronics Company, Inc. products. The purchaser, by the acceptance of the equipment, assumes all liability for any damages which may result from its installation, use or misuse, by the purchaser, his or its employees others.