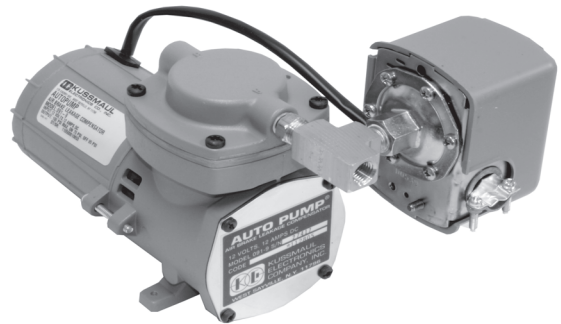


INSTRUCTION MANUAL

AUTO CHARGE 1200 PUMP PLUS AUTOMATIC BATTERY CHARGER

MODEL # 091-9-1200



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

OUTPUT: 40 AMPERES

3 YEAR WARRANTY



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INTRODUCTION

The AUTO CHARGE 1200 PUMP PLUS is a compact, completely automatic, single channel battery charger designed for vehicles with a single battery system. The charger is ruggedized to withstand the shock and vibration encountered by vehicle mounted equipment.

FEATURES

- Electronic remote sensing of true battery voltage, eliminates the need for sensing wires
- Automatic current limiting
- Remote Battery charge/condition indicator display
- LED status indicators
- Pump output with AC or DC mode rocker switch

FUNCTIONALITY

Charge Controls & Electronic Remote Sensing:

The Auto Charge 1200 Pump Plus contains a precision voltage controller to maintain the battery's charge. Automatic electronic remote sensing measures the true battery voltage, eliminating the need for the additional sense wires. The output current of any charger is inherently a series of pulses whose frequency is determined by the power line frequency. Therefore, there are brief intervals during which no charging current flows. Since there is no charging current there is also no voltage drop between the charger and the battery. The Auto Charge 1200 Pump Plus measures and stores the true battery voltage. This battery voltage is compared to a reference voltage, any error detected is then used to control the charger output at the desired level. There is no "trickle charge" and therefore no danger of overcharging and water boil-off.

Automatic Current Limiting:

When batteries are severely discharged, some battery chargers can be overloaded due to the high charging current required. The Auto Charge 1200 Pump Plus contains an automatic current limit. The current limit feature limits the output current to 40 amperes when charging a deeply discharged battery or if the starter cranks the engine while charging. The current limiter thus eliminates the need for an ignition interlock circuit.

Remote Battery Charge Condition Indicator:

This indicator shows the charge condition of the battery in 10-levels from “LOW CHARGE” to “FULLY CHARGED”. This device indicates a defective battery when a bar graph does not rise to the “FULLY CHARGED” level after an extended period of charging. **Note:** If a battery is being charged with an external load of 4 to 10 amperes across its terminals, the bar graph may move down 1 or 2 levels. This does not indicate a defective battery.

Pump Output:

The output terminal strip provides an additional output to accommodate a 12VDC air pump, part # 091-9 air compressor. The air pump output works in conjunction with a front panel mounted rocker switch. For normal operation, the rocker switch should be left in AC mode, which means that the air pump works only when shoreline power is supplied to the charger. With the switch in DC mode the compressor will operate when AC power is ON or OFF. In either position the compressor operates from the vehicle's batteries, while the charger automatically recharges the batteries as required.

LED Status Indicators:

- **BATTERY CONNECTED:** Indicates that a battery of proper polarity is connected to the charger output terminals.
- **FAN ON:** Indicates that the fan is operating. Fan operates whenever output exceeds 10 amperes. Fan turns off when output current decreases below 5 amperes.
- **POWER:** Indicates that AC voltage is present.

INSTALLATION

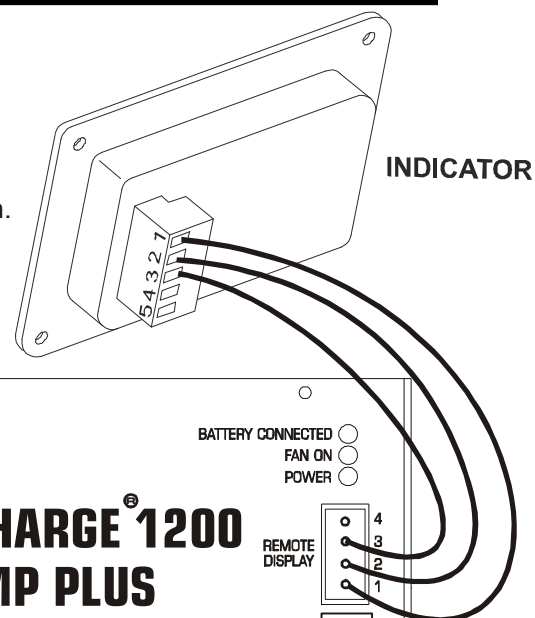
1. The Auto Charge 1200 Pump Plus should be installed in a well ventilated area.
2. Mount the charger with the four holes provided.

WIRING

1. Refer to Installation Wiring Diagram.
2. Kussmaul Electronics recommends installing an 80 amp fuse or circuit breaker protection in line with the battery output. **Note: Fuse or circuit breaker protection should be placed near battery output terminal.**
3. Double check all wiring before applying 115 AC volts to input terminal. Verify that the battery voltage appears at the charger output terminals. **Note:** A minimum of 6 volts is required to start the charger.
4. Apply 115 volts (shoreline power) to input terminal and observe that the charger is operating. The Remote Bar Graph need not be connected for the charger to operate.

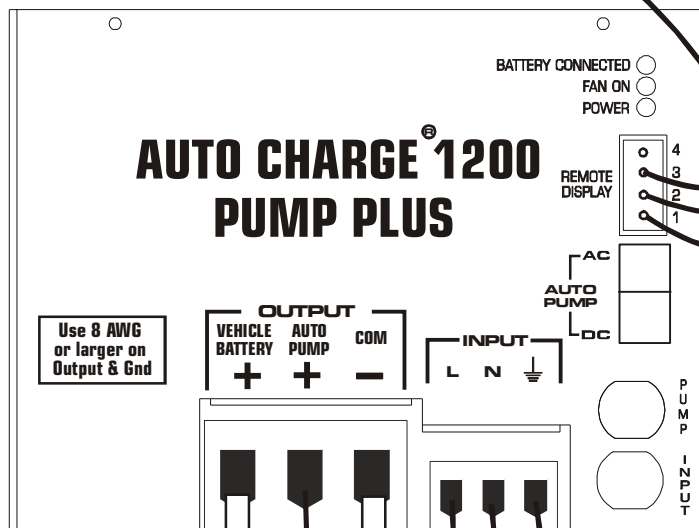
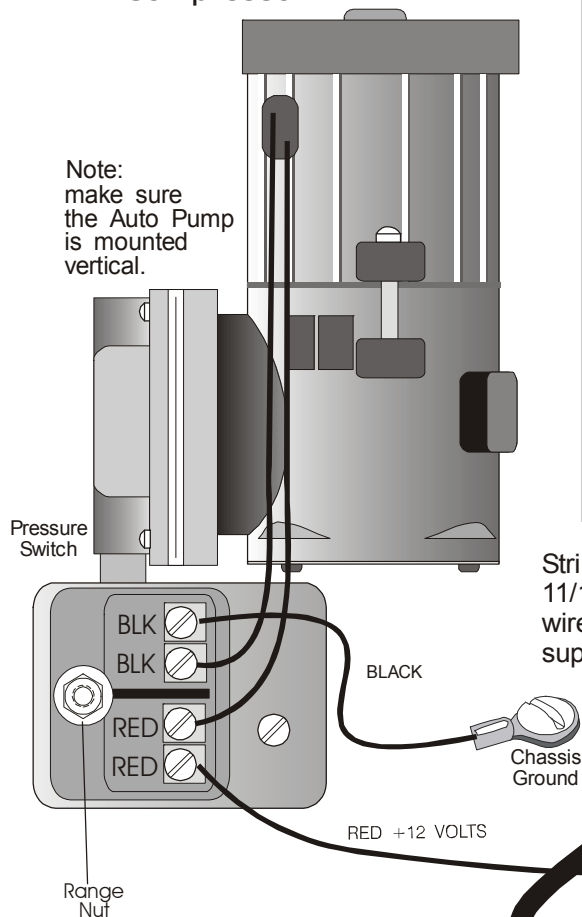
INSTALLATION WIRING DIAGRAM

NOTE: Pin 1 of indicator must go to Pin 1 of Remote Display on charger.
Pin 2 of indicator must go to Pin 2 of Remote Display on charger, and so forth.
Check connections and color of wires before plugging-in.



**Auto Pump
Air Compressor**

Note:
make sure
the Auto Pump
is mounted
vertical.



Strip insulation to
11/16" and install
wire ferrule
supplied, 2 places

A.C. INPUT POWER

GROUND
NEUTRAL
LINE

**Optional -
80 Amp
Automatic Circuit Breaker
(part #: FUS-80-A)**

Chassis
Ground

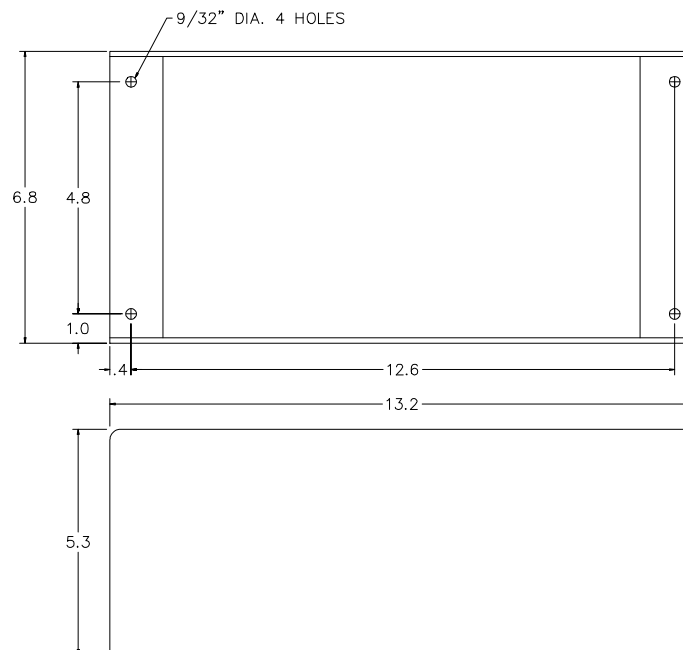
WIRE SIZE CHART

CONNECTION	DEFINITION	WIRE SIZE
COM	NEGATIVE CHARGING LEAD	8 AWG
VEHICLE BATTERY	POSITIVE CHARGING LEAD FOR BATTERY	8 AWG
AUTO PUMP	POSITIVE OUTPUT FOR AUTO PUMP	14 AWG
INPUT	A.C. INPUT POWER (SHORELINE)	14 AWG

NOTE: Minimum wire size on charger output and ground is **#8 AWG**. For a length of 10 feet or longer **#6 AWG** is required. Smaller gauge wire may cause overheating of terminal. Use 2-966067 wire ferrule over wire to simplify insertion of wire into terminal strip and to improve connection. Additional information is available upon request.

SPECIFICATIONS

Input Power:	115 volt, 50/60 Hz, 10 amperes
Input Fuse:	15 ampere, resettable, circuit breaker
Pump Fuse:	15 ampere, resettable, circuit breaker
Output Power:	12 volts DC, 40 amperes max
Remote Sensing:	Electronic, sense wires not required
Status Indicators:	Battery Connected, Fan On, and Power On
Charger Indicators:	Remote Bar Graph indicator
Weight:	21 pounds



Outline Dimensions: AUTO CHARGE 1200 PUMP PLUS

INSTALLATION RECORD & WARRANTY

Date Installed _____

Installed By _____

Vehicle Identification _____

Vehicle Owner _____

WARRANTY

All products 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. Equipment is to be returned, shipping charges prepaid and will be returned, after repair, shipping charges paid.

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 or others.