EURO CHARGER I VHO
AUTOMATIC BATTERY CHARGER

MODEL # : #091-162-XX

NOTE :
This charger is designed for vehicles with dual electrical systems,
Each battery is individually charged

scan using your mobile device for more information

File: IM_091-162-XX
Rev: REV B
Revised By: PS
Date: 5-24-26

3 YEAR WARRANTY

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KUSSMAUL™ ELECTRONICS
ENERGIZED AND READY, WHEN SECONDS COUNT

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IMPORTANT SAFETY INSTRUCTIONS

I. PERSONAL PRECAUTIONS:

1. Someone should be within range of your voice or close enough to come to your aid when you work near a lead-acid battery.
2. Have plenty of fresh water and soap nearby in case battery acid contacts skin, clothing, or eyes.
3. Wear complete eye and clothing protection. Avoid touching your eyes while working near a battery.
4. If battery acid contacts skin or clothing, wash immediately with soap and water. If battery acid enters the eye, immediately flood eye with cold running water for at least 10 minutes and get medical attention immediately.
5. **NEVER** smoke or allow a spark or flame in the vicinity of the battery or engine.
6. Be extra cautious to reduce the risk of dropping a metal tool onto the battery. It might spark or short-circuit the battery or other electrical part and cause a fire or an explosion.
7. Remove personal metal items such as rings, bracelets, necklaces, and watches when working with a lead-acid battery. A lead-acid battery, when shorted, can produce a current sufficient to weld a ring or the like metal causing a severe burn.
8. Use the battery charger for charging gel-cell, AGM and flooded lead-acid batteries only. Do not use the charger for charging dry-cell batteries that are commonly used with home applications. These batteries may burst and cause injury to persons and damage to property.
9. **WARNING – RISK OF EXPLOSIVE GASES**: Working in the vicinity of a lead-acid battery is dangerous. Batteries generate explosive gases during normal battery operation.

II. CHARGER PRECAUTIONS:

1. **NEVER** charge a frozen battery.
2. Make sure the cord is located so that it will not be stepped on, tripped over, or otherwise subjected to damage or stress.
3. Do not operate the charger with a damaged cord or plug; replace them immediately.
4. Do not operate the charger if it has received a sharp blow, been dropped, or otherwise damaged.
5. Do not disassemble the charger. Incorrect reassembly may result in a risk of electric shock and fire.
6. To reduce the risk of electric shock, disconnect the charger from the AC source before attempting any maintenance or cleaning.
7. **LOCATION OF CHARGER**: The charger should be mounted on a wall, vehicle floor, ventilated compartment or other suitable surface as close to the batteries to be charged as possible. Do not block the charger's fan or air intakes. Do not mount the charger directly over the batteries as fumes may cause excessive corrosion. The area should be well ventilated and free from excessive moisture, exhaust manifolds, and battery fumes. For maximum performance, the charger should not be located in an area of extreme high temperature. The charger is not waterproof. Do not mount the charger where there is a possibility of water entering the unit. Evidence of water entry into the charger will void the warranty.
8. **CAUTION**: Do not attempt to increase battery bank capacity by splitting the output of one of the banks with a diode-type battery isolator. The diode isolator lowers the charger voltage and results in undercharging the batteries connected to it. If additional capacity is required it is preferable to add another isolated or parallel battery.

III. GROUND AND AC POWER CORD CONNECTION:

1. The charger should be grounded via the AC power connection to reduce the risk of electrical shock.
2. The charger must be plugged into or wired to an outlet that is an over-current protected 3 prong outlet. Alternatively, it may be routed through a separate dedicated fuse or circuit breaker on an AC distribution panel with proper earth/safety ground. All wiring shall comply with UL recommendations, NEC or NFPA standards and local ordinances. Never alter the AC cord or plug if provided. Any modification of the cord must only be done by a qualified electrician. Improper cord/outlet connection may result in a risk of electrical shock.
3. Observe color coding of the AC wiring as follows:

   Black……..... AC Hot or LINE (fused)
   White……..... AC Neutral
   Green……..……. AC Ground (safety/earth)

4. **CAUTION**: (230 VAC applications only): If AC input is provide from a source consisting of two HOT or LINE leads (phase-to-phase 230 VAC input voltage); an external fuse or circuit breaker must be used to protect both hot leads.

INTRODUCTION

The Euro Charger I -VHO Battery Charger is a compact completely automatic charger designed for installation on vehicles with a single 12Volt or 24Volt battery system. Voltage is sensed so that the battery system is charged according to its requirements.

The total output of the Euro Charger I -VHO Battery Charger is:
091-162-24: 20 Amperes for 24Volt Battery Systems
091-162-12: 40 Amperes for 12Volt Battery Systems

Construction of the Euro Charger I-VHO is extremely rugged to withstand the shock and vibration normally encountered by vehicle mounted equipment. The unit operates completely automatically and stops charging the battery system when fully charged. There is no trickle charge and therefore no danger of overcharging and water boil-off. Any parasitic loads on the battery such as radio, lights, etc., are automatically supplied with current by the charger.

FEATURES

- Completely automatic operation, charges battery on demand.
- Input voltage, switch selectable, 115 volt or 230 volt.
- Output voltage regulated, eliminates overcharging battery.
- Output, current limited to protect charger from overloading.
- Optional charge indicator.

WIRING

I. BATTERY CHARGER WIRING INSTRUCTIONS

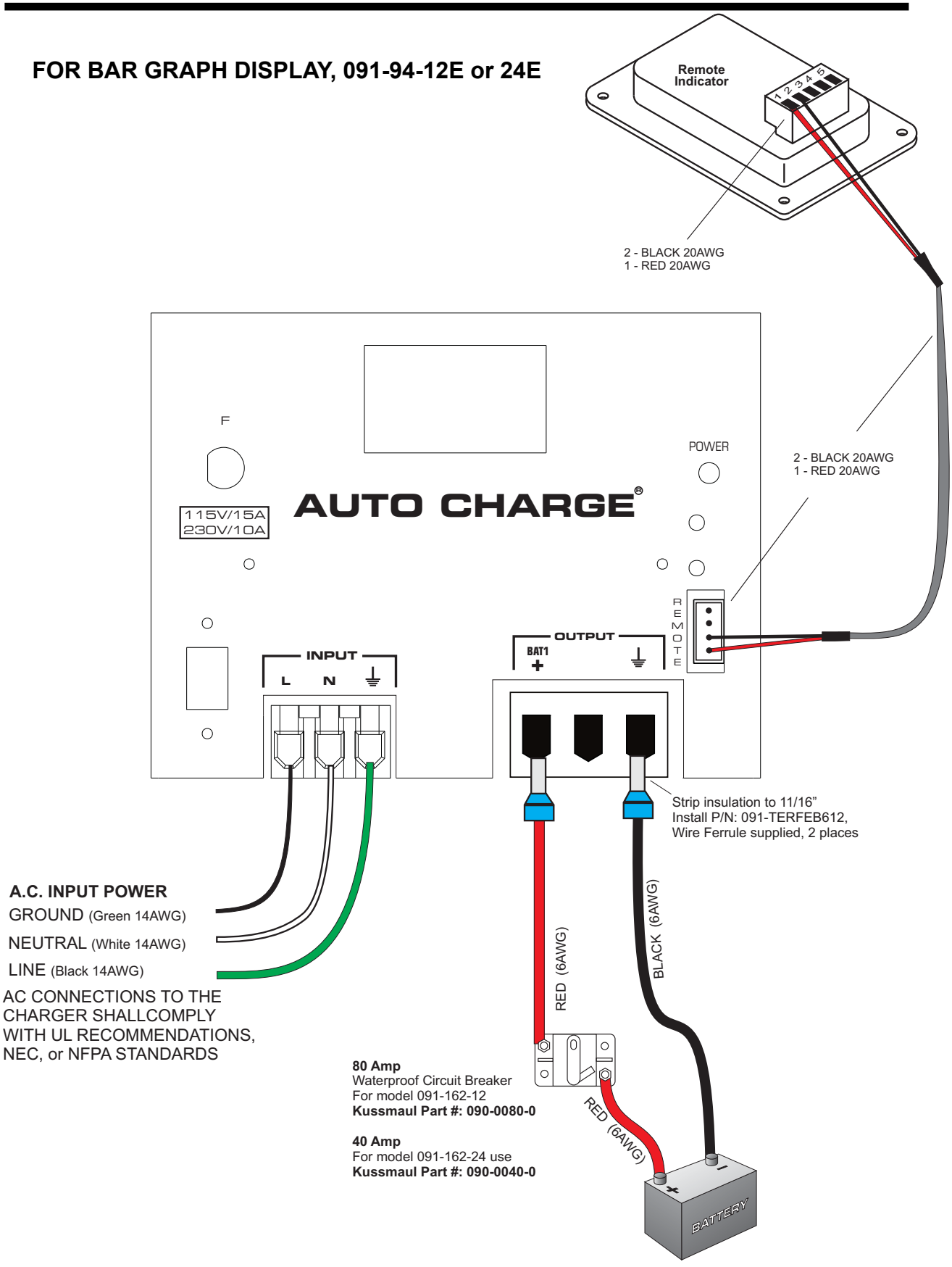
1. Refer to the Installation Wiring Diagram I.
2. Battery charger should be installed in a well adequate ventilation.
3. Mount charger using four predrilled holes provided.
4. Refer to Wiring Specifications to determine the recommended wire size and maximum lengths. Using a smaller guage may cause overheating of the terminal. Additional information is available on request, if longer larger wiring is required.
5. Connect the wiring from the battery system, to the charger output terminal strip.
6. Connect charger wiring the battery system - use ring lugs that have been securely crimped or soldered.
7. Verify that the dual voltage switch (DV switch) on the front panel corresponds to the applied voltage.
8. Wire AC power to input termianl strip.
9. Double check all wiring before applying AC power to input terminal.
10. Apply AC power (shoreline power) to input terminal and observe that the charger is operating. Power On light will illuminate to show that the charger has power.
11. Verify that the battery voltage appears at the charger output terminals. A minimum of 6 volts is required to start the charger.

II. WIRING SPECIFICATIONS

Length of Wire to Battery (feet)	0 - 5		< 5 - 10**		< 10 - 20*	
Battery Charger Connections	V. BAT +	COM -	V. BAT +	COM -	V. BAT +	
	8	8	6	6	4	4
Wire Ferrule Used	091-TERFER812		091-TERFEB612		None	
* Consult factory if length of wire to battery is longer than 20 feet						
** Supplied with wire terminal hardware for 10 foot installation						

INSTALLATION WIRING DIAGRAM

FOR BAR GRAPH DISPLAY, 091-94-12E or 24E



SPECIFICATIONS

Input Power: 230/115 Volts, 50/60 Hz, 5/10 Amperes

Input Fuse: 15 Ampere @ 115V; 10 Ampere @ 230V

Output Current: Amperes Max (-12) @ 40 Amperes; (-24) @ 20 Amps

Float Voltage: (-12) = 13.25 Volts; (-24) = 26.5 Volts

Remote Sensing: Electronic, sense wires not required

Torque: DC output connector: 20 in. lbs

LED Status Indicators: Power On

Hardware Pack Provided: (2) #6 AWG Blue Ferrules, P/N: 091-TERFEB612

Charger Indicators: Optional Bar Graph Indicator

Output Waterproof Circuit Breaker (Optional):

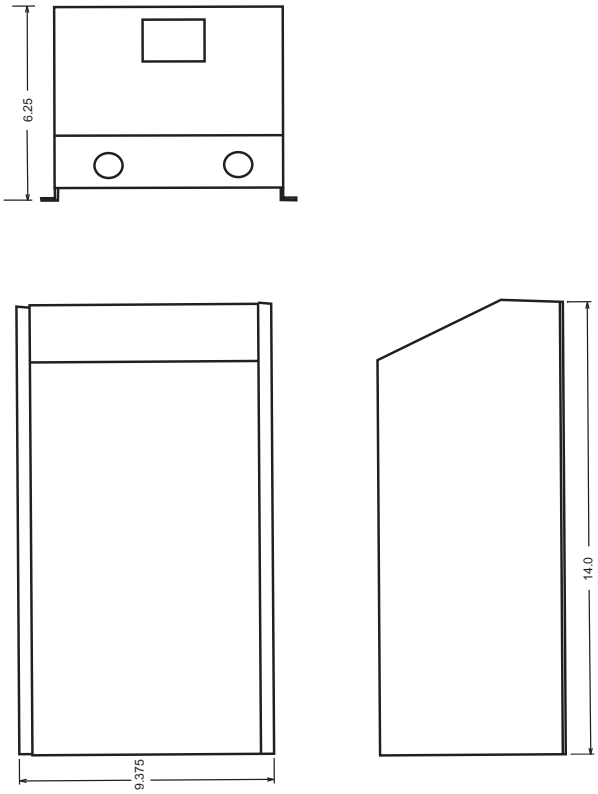
(-12): 80 Amperes, P/N: 090-0080-0

(-24): 40 Amperes, P/N: 090-0040-0

Output Buss Bar (Optional): 5 Studs, P/N: 002-3595-5

Weight: 22 pounds

OUTLINE



OPTIONAL ACCESSORIES

I. BAR GRAPH DISPLAY, MODEL #:091-94-12E or -24E

- 10-Segment LED display indicate the “state of charge” and the general condition of the batteries

II. WATERPROOF CIRCUIT BREAKER, MODEL #: 090-080-0 or 090-0040 (for 091-162-24)

- Combines switching and circuit breaker function
- Compact size and surface mount configuration
- Protects high amperage circuits
- Latch arms resets breaker after overload
- Cannot be held in ON position if short remains on circuit
- Waterproof - Ideal for truck applications

INSTALLATION RECORD

DATE INSTALLED _____

INSTALLED BY _____

VEHICLE IDENTIFICATION _____

VEHICLE OWNER _____

WARRANTY POLICY

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.

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