FILE: IM_091-96-XX_revC
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INSTRUCTION MANUAL

LOAD MANAGER 1H

UNDER-VOLTAGE DETECTOR RELAY

WITH HYSTERESIS

MODEL #091-96-XX

A BATTERY VOLTAGE MONITOR WHICH DETECTS AN UNDER-VOLTAGE CONDITION.

3 YEAR WARRANTY

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INTRODUCTION:

The 091-96-xx LOAD MANAGER 1H is a device, which continuously monitors the voltage of the battery. The unit is factory set to actuate at 12 volts, for 12 volt models or 24 volts for 24-volt models, but may be adjusted to other voltages. The output relay is capable of switching 30 amperes, and both a “normally open” and normally closed” contact are provided.

INSTALLATION:

Connect the Load Manager 1H to the battery, the load and the fuse as illustrated in figure 1. This is a typical circuit. Other circuit configurations are possible. It is always necessary to connect the Bat+ and Bat- terminals to that point at which the voltage is to be sensed.

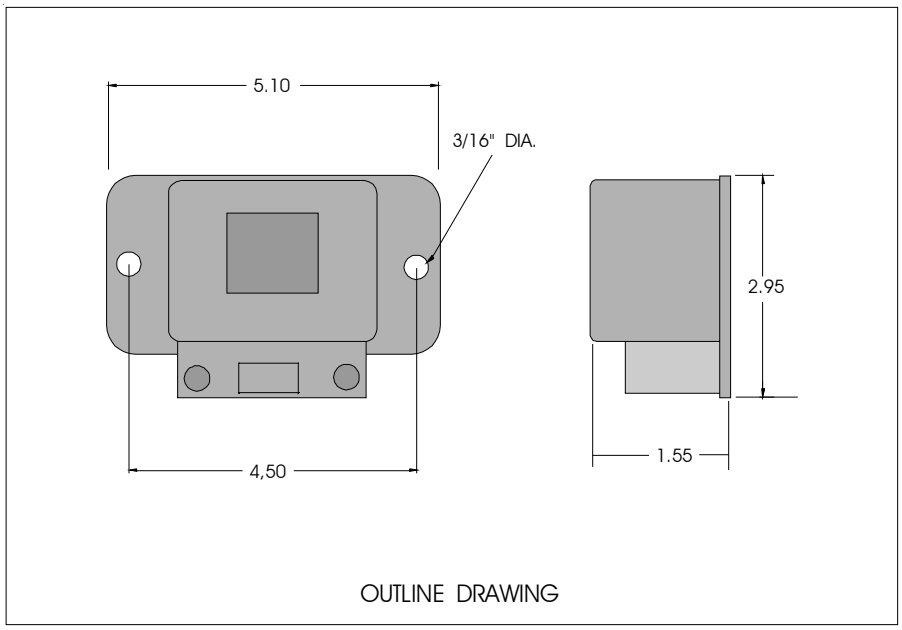
ADJUSTMENT:

The factory setting for the Load Manager 1H is 12.0 volts (24 v). Field adjustment of the set point is possible. To do this, remove two screws holding down the cover. Note the position of the voltage adjustment trimmer R6. This is the 12-volt (24 v) setting. To decrease the voltage turn counter clockwise. To increase the voltage turn clockwise. Two indicator LED’s are provided adjacent to the terminal strip. When the green LED is lit, the voltage sensed is normal. When the red LED is lit, the voltage is below the set point. The voltage detector can be tested by gradually lowering the system voltage while simultaneously measuring the voltage applied to the input terminals with a precise voltmeter and noting the voltage at which the red LED turns “ON”.

The 091-96-xx Load Manager 1H contains an adjustable high hysteresis feature. With the normal trip point set to 12.0 volts (24.00 volts), the hysteresis circuit maintains the relay energized until the voltage increases above 13.45 volts. This assures that the loads being controlled are not energized until the sensed voltage reaches 13.45 volts (26.9 volts). This limits the ON/OFF cycling of the load. The hysteresis may be adjusted using trimmer R15. Turning R15 CCW will decrease the hysteresis while turning CW will increase. Unless absolutely necessary it is recommended that the hysteresis remain at the factory setting.

SPECIFICATIONS:

Model	091-96-12	091-96-24
Input voltage	10 to 15 volts D.C.	20 to 30 volts D.C.
Input amps, relay off	0.02 Amps	0.015 Amps
Input amps, relay on	0.1 Amps	0.05 Amps
Relay contacts, amps	30 Amps	30 Amps
Case	non-weatherproof	non-weatherproof
Weight	4 ounces	4 ounces



OUTLINE DRAWING

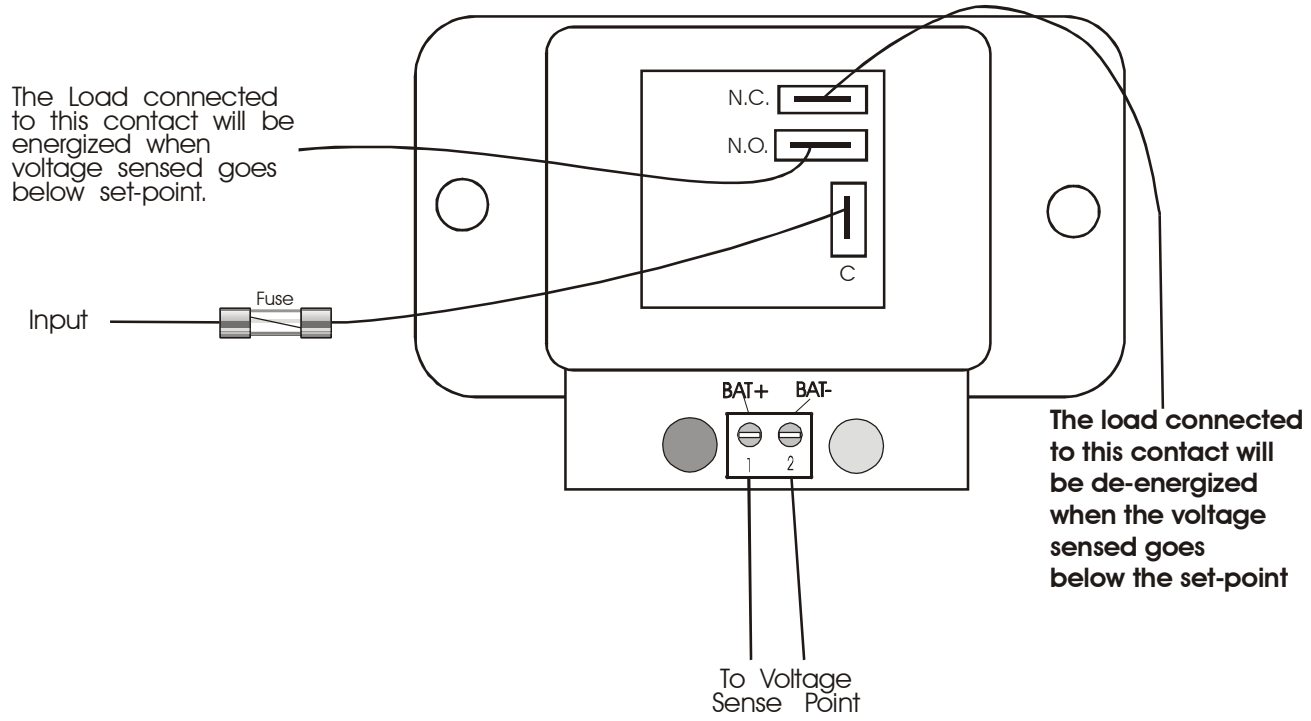


Figure 1, Load Manager 1 Installation

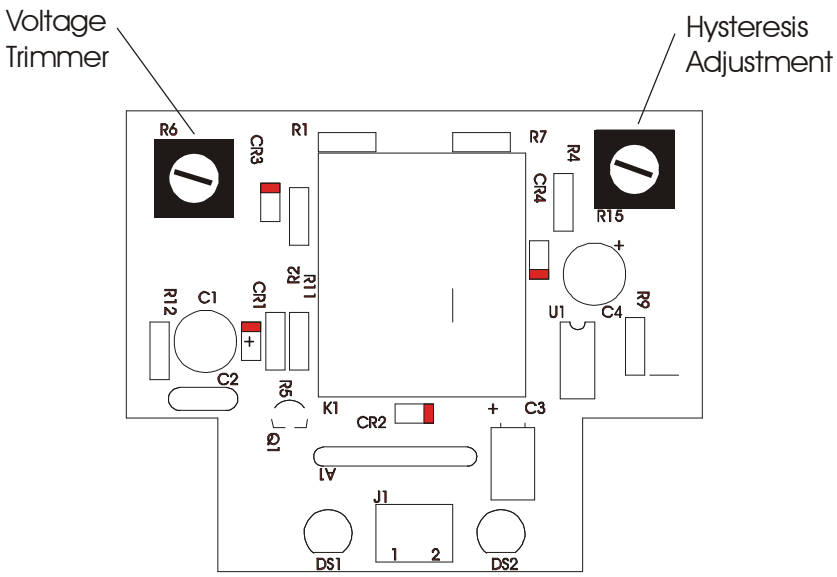


Figure 2, Voltage Adjustment

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.

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