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INSTRUCTION MANUAL

418 MHZ TRANSMITTER and RECEIVER

A Radio Frequency Control Link That Permits
Operating Electrical Devices In A Building From
A Transmitter In A Vehicle

MODEL# 091-133

CAUTION: ANY CHANGE MADE BY THE USER TO THIS EQUIPMENT WITHOUT THE WRITTEN APPROVAL OF KUSSMAUL ELECTRONICS CO INC COULD VOID THE USERS AUTHORITY TO OPERATE THIS EQUIPMENT

INPUT, RECEIVER: 120 VOLTS, 50/60 Hz AC
TRANSMITTER: 12 VOLTS DC
OUTPUT: RELAY CONTACT CLOSURE. N.O., 2 AMPS

3 YEAR WARRANTY

KUSSMAUL ELECTRONICS CO., INC.
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INTRODUCTION

The Model 091-133 418 MHz Transmitter/Receiver is a remote control system between a vehicle and a building. It is intended to operate various electrical devices in the building when signaled to do so from the vehicle. The Transmitter is installed in the vehicle above the dash and near the windshield. The receiver is installed on a shelf or on a wall, away from large metallic surfaces. The transmitter and receiver have four proprietary channels; channels 6, 7, 8, & 9. Channel 9 is dedicated to automatically producing a 1 second closed contact at the receiver channel 9 output upon the ignition switch being turned on. This is intended to actuate the Fan Controller in the building. The other three channels could be used to open the door, close the door, or stop door movement. The other three channels are operated by a momentary push button switch mounted on the dashboard by the installer.

Each Transmitter and Receiver can be coded using a DIP switch mounted on each unit. In this way any number of proprietary channels can be implemented.

The Transmitter is of such low power that a license is not required to operate it, and it has a range of 150 feet to the receiver. For single receiver systems; each truck can have a transmitter which will communicate with the single receiver. For multiple Receiver systems each Receiver will be assigned a code. A given Transmitter will only communicate with a receiver if it has the code as that receiver. Dip switches on the Receiver and Transmitter code the Transmitter and Receiver. Thirty-two different codes are possible.

INSTALLATION & WIRING

Mount the transmitter on the top of the dash, facing the windshield with the antenna vertical.

Mount the receiver at a convenient location in the firehouse. It may be shelf mounted on its base or wall mounted using a bracket. The antenna shall be vertical. Be sure that there are not any metallic barriers between each transmitter and the receiver.

Make the connections shown in Figure 1.

Figure 2 shows the mounting dimensions for each unit.

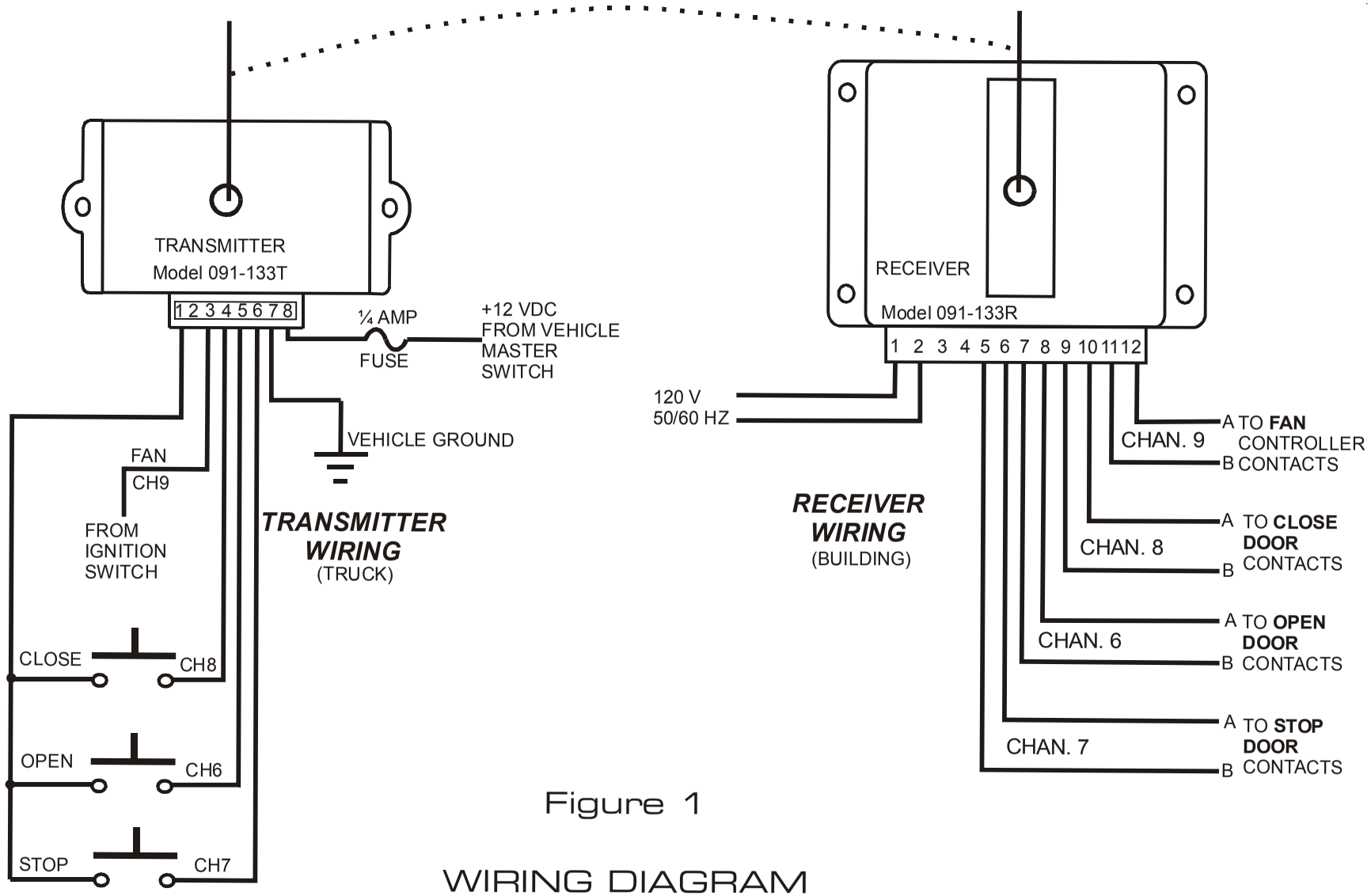


Figure 1

WIRING DIAGRAM

Rev. 12/21/01

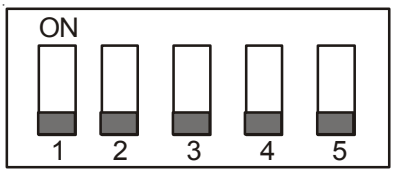
SETTING THE CODE

Each Transmitter and Receiver has a dip switch, the setting of which determines the code sent and received.

The dip switch in the Transmitter and it's corresponding receiver must be set to the same code

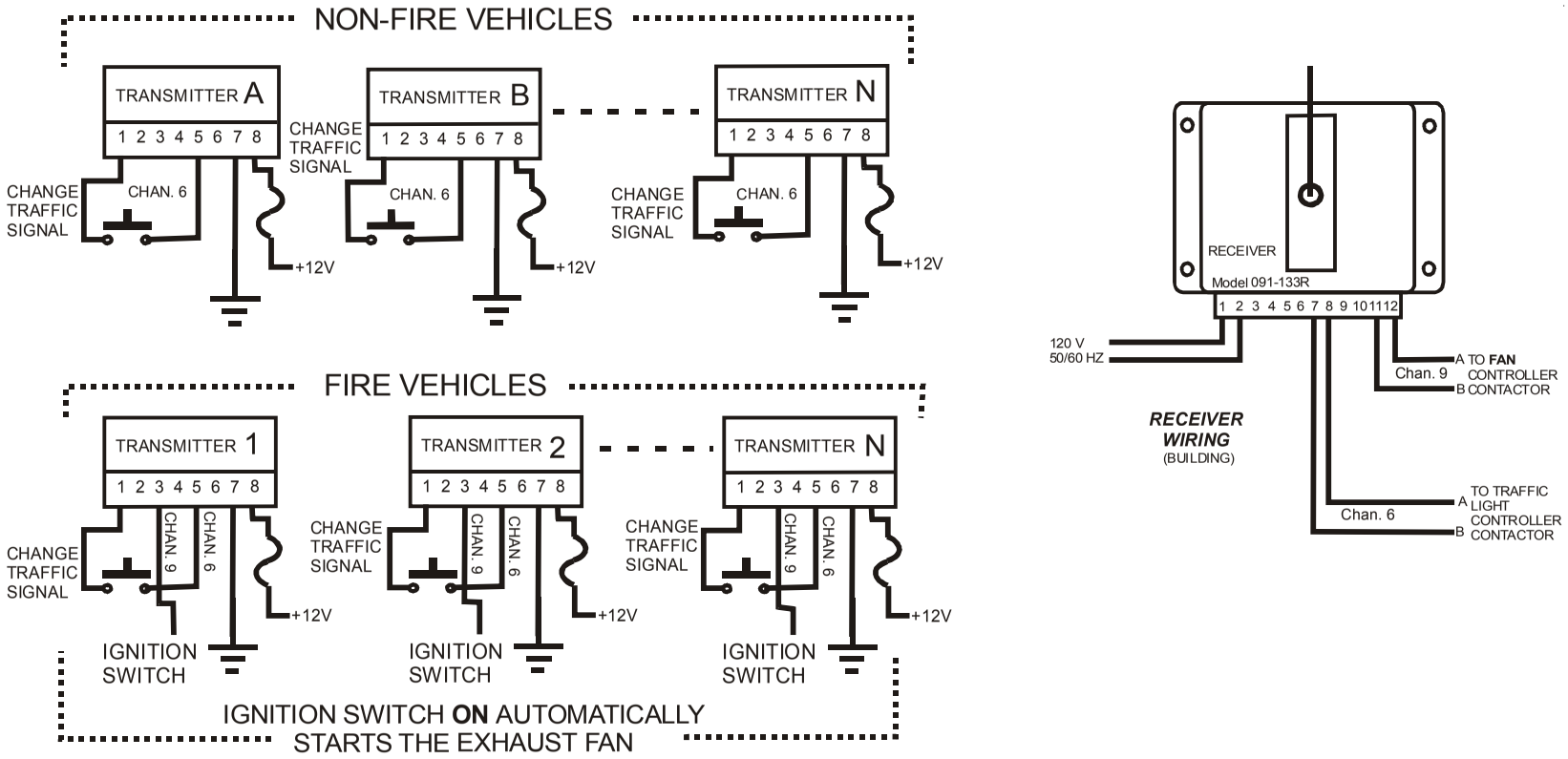
The units are normally coded OFF, OFF, OFF, OFF, OFF for single Receiver systems. For multiple Receiver systems, each receiver is given a separate code. The corresponding transmitters must be set to the same code.

To change the code, remove the Transmitter and Receiver top covers and change the dip switches.



INSTALLATION EXAMPLES

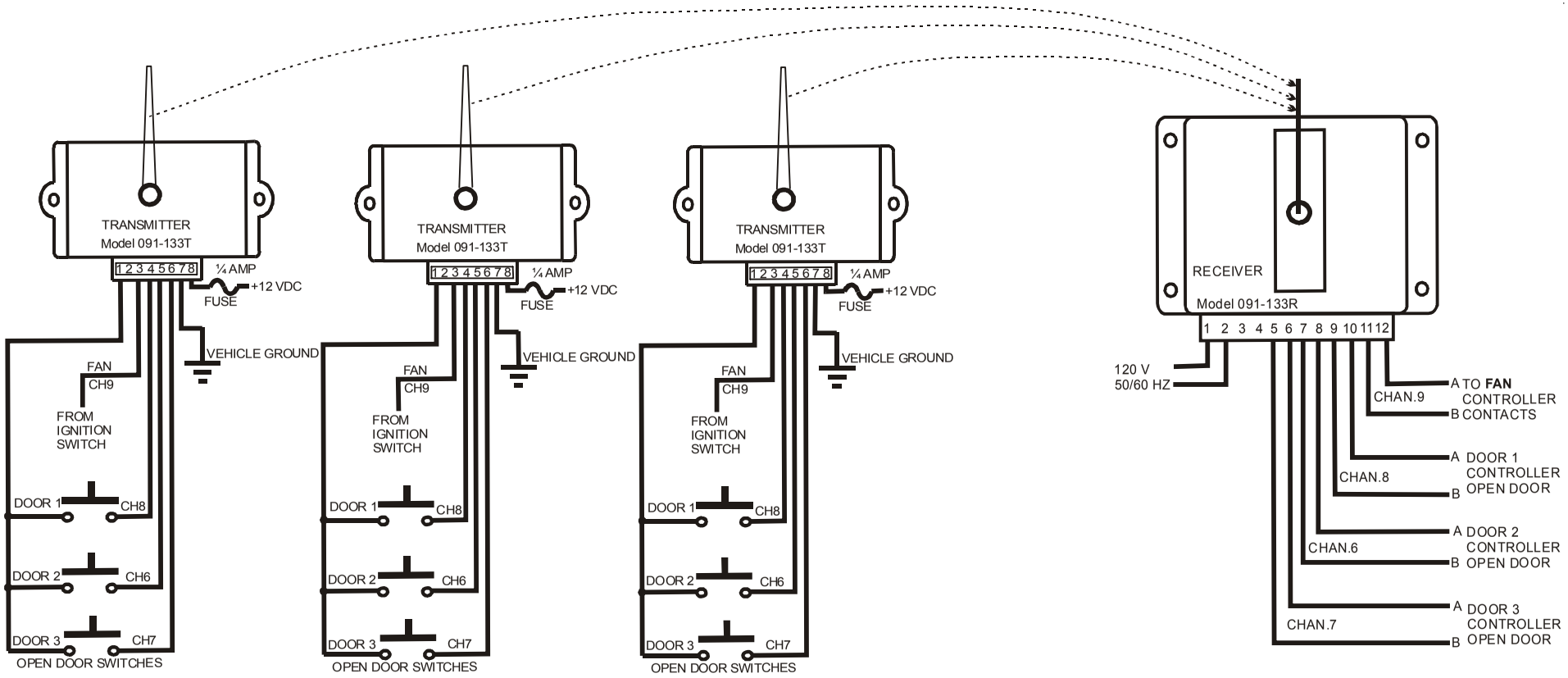
Figures 3 and 4 show possible installation examples for the Model 091-133 Transmitter and Receiver. There are many other possible installations. Consult Kussmaul Electronics Co. Inc. Engineering Dept. to discuss your particular application.



This diagram illustrates a typical installation in which a fire department wishes to automatically start an exhaust fan when any truck driver turns on his ignition key. Each truck also has a momentary push-button on it's dashboard to change a traffic signal. There is also a police department adjacent to the firehouse and they wish to change the traffic signal from any of their police cars. There can be any number of police and fire vehicles, each however, must have a transmitter.

Figure 3

TYPICAL INSTALLATION CONTROLLING EXHAUST FAN & TRAFFIC LIGHT



This is an example of a firehouse with 3 trucks and 3 doors. The installation requires that any door can be opened from any vehicle. In addition an exhaust fan is to start when a driver starts a truck. This permits any truck to park in any location.

Each vehicle has three switches, marked DOOR 1, DOOR 2, & DOOR 3. The driver selects which door he wants to open. As soon as the ignition switch is turned ON, the exhaust blower is started. For safety considerations the doors are not closed from inside the vehicle. Note that this arrangement requires a door opener with independent OPEN and CLOSE inputs.

This configuration could be extended to an application with more trucks and more doors by having multiple transmitters in each vehicle and multiple receivers in the building.

Figure 4

TYPICAL INSTALLATION, 3 TRUCKS & 3 DOORS

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SPECIFICATIONS OUTLINE

Operating Frequency: 418 MHz

Transmitter Main Input Power: 12 volts D.C. battery.

Transmitter Current Draw: Less than 15 milliamperes D.C..

Number of Transmitter independent (or proprietary) Channels: 4

Number of possible Transmitter Codes: 32

Receiver Main Input Power: 115 volts, 60 Hertz

Receiver AC Current Draw: 15 milliamperes AC

Number of Receiver independent (or proprietary) Channels: 4

Number of Possible Receiver Codes: 32

Range of Transmission (between Transmitter & Receiver): 150 feet typical

Temperature Environment: 0 to 50 degrees C.

Outline Drawing: Refer to Figure 2

OUTLINE DRAWING

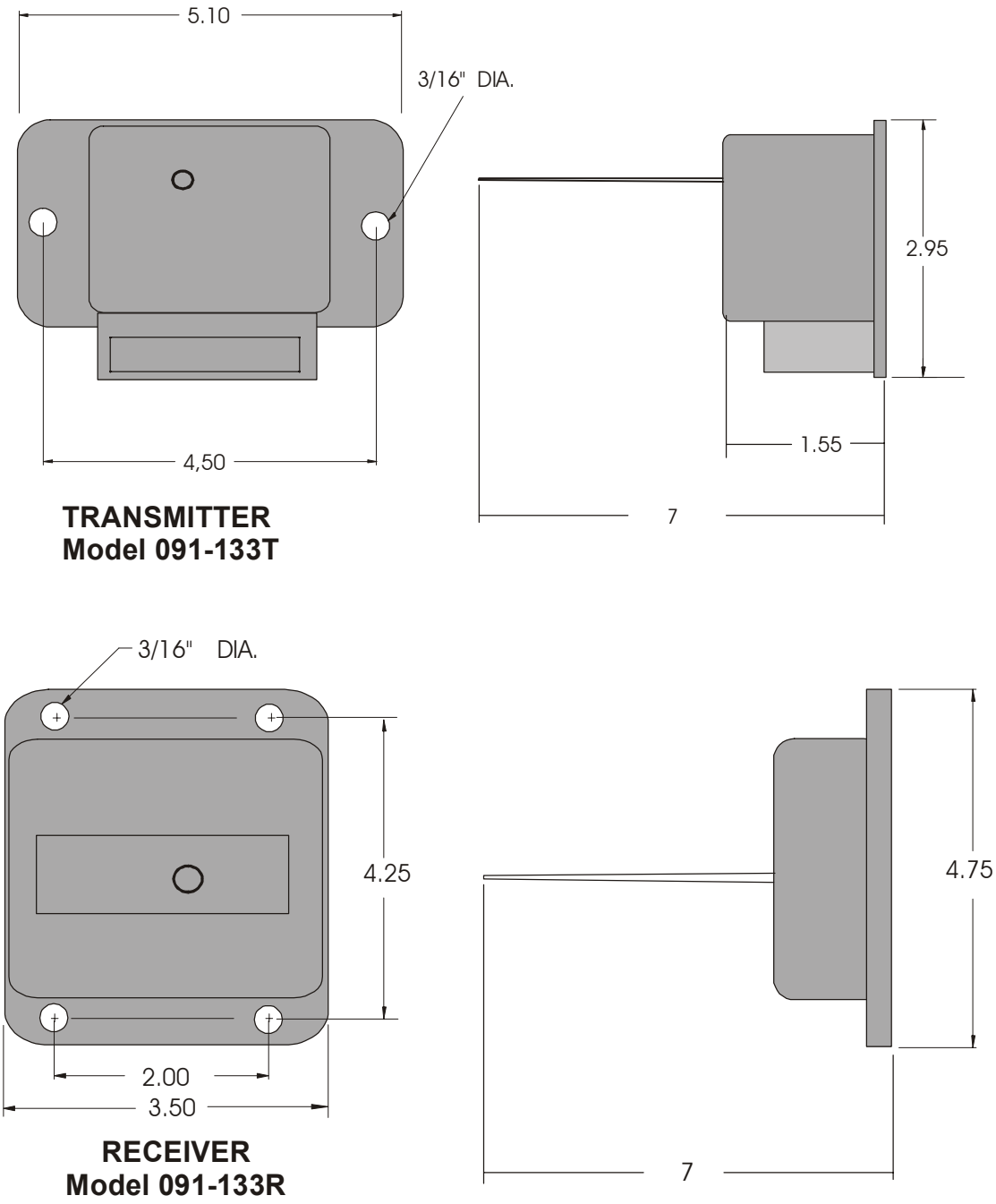

FIGURE 2

TRANSMITTER & RECEIVER MOUNTING DIMENSIONS

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.