

# Drive-Alert

*Vehicle Detection Systems*

**THE ORIGINAL VEHICLE DETECTION SYSTEM!**

## DA-500 INSTALLATION MANUAL



### THE BASICS

- 1 A sensor(s) detect(s) a vehicle entering a monitored area
- 2 A control panel receives a signal from the sensor and triggers an alert-whistle inside the control panel

### DA-500 Drive-Alert



### MORE OPTIONS

- 3 Add a remote chime in the front room to alert those on the first floor
- 4 Add another chime in the basement to alert those downstairs
- 5 Add a third chime in an upstairs bedroom to alert those upstairs
- 6 Add a wireless or hard-wired timer controlled light kit to turn on outdoor lights, indoor overhead lights, and/or lamps to warn strangers or welcome friends
- 7 Attach video surveillance to record activity and display the driveway on a monitor inside
- 8 Add a portable chime to alert those in the backyard pool, garden or deck
- 9 Activate signs, gates or other equipment

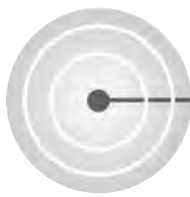


# TABLE OF CONTENTS

<u>Page</u>	<u>Content</u>
	Cover Page
1	Table of contents
2	<b>Introduction to the DA-500 and Accessories</b>
3-4	<b>Installation Guide</b>
5	Operation Instructions
6-7	Schematics for using the DA-500 to control other alarms and chimes
7	DA-500 Contents and Specifications
8	DA-655 Installation
9	<b>Technical Support and Warranty Information</b>
10	<b>Troubleshooting Guide</b>

## DA-500 Drive-Alert vehicle detection system





# Drive-Alert

## Vehicle Detection Systems

### Model DA-500 General Information

Drive-Alerts are perfect for use in residential driveways, on farms, at drive-up windows, in remote locations, and to protect valuable assets and equipment such as tractors or construction vehicles. The Drive-Alert will detect a vehicle approaching, or whenever a vehicle or metal equipment is moved.

The Drive-Alert detects any metal which contains iron. It will not detect copper or aluminum.

The Drive-Alert's method of operation is to sense the change in the magnetic field around it. This field is always present, and is disrupted when a metal object moves through it.

The key element in the Drive-Alert installation is to locate the sensor/probe in the area where you wish to detect this change. The usual installation is near the entrance of a driveway, but located far enough away from roads or streets so as not to detect traffic. Moving ferrous (iron) metal trips the sensor. Larger metal objects are detected easier than smaller. Faster moving metal objects are detected easier than slower. Metal moving nearer the probe is detected easier than metal moving farther away. These are the three factors which determine the system's range of detection. Therefore, trucks traveling 65 mph can be detected up to 50 feet; cars moving 4 mph up to 8 feet; and a walking person with steel toe shoes up to 1 foot.

The Control Panel houses the electronics which allows the Drive-Alert to function. It also contains an annunciator, and the terminal strip permits the attachment of the probe as well as accessories or other devices.

Longer lengths of cable are available. Simply order a DA-500CP (control panel only) and a DA-051-\_\_\_ where you fill in the blanks for the amount of cable needed in 50' increments. Ex: DA-051-250 is a sensor with 250' of cable.

A Hard-Wired DA-655 Chime with Volume is the most popular accessory for the DA-500, and is HIGHLY recommended for all business, drive-up window, and high-traffic areas where a DA-500 is used. The chime is far more pleasant than the standard whistle inside the DA-500 Control Panel, and the volume control makes it far more versatile.

A DA-505 Hard-Wired Timer Control unit is available. It is housed in a separate box and is attached by wires to the terminal strip on the Master Control Panel. This Timer Control turns on lights, usually outside lights, for an adjustable period when a vehicle is detected.

The Hard-Wired DA-052V allows you to add additional alert whistles to the DA-500.

Wireless chimes are available with the DA-066 Chime Transmitter. This transmitter easily hooks up to the contacts on a DA-500 and triggers DA-068 Plug-in chimes and DA-070 Battery-powered Portable Chimes.

Wireless light control is available with the DA-606LK with timer control.



*The DA-500 includes a Control Panel, Sensor, and 100 feet of direct burial cable*



**DA-051-\_\_\_ Probe with longer lengths of cable**



**DA-655 Chime with Volume**



**DA-052V Remote Whistle**



**DA-505 Timer Control**



**DA-066 Wireless Transmitter for wireless chimes pictured with a Wireless DA-068 Chime and a Wireless DA-070 Chime**



**DA-606LK Wireless Light Kit**



The Control Panel is generally located in a closet, utility room, or garage. If the only noisemaker used (remotes are available) is the one contained within the control panel, the panel must be located where users can easily hear the "whistle." The control panel is not suitable for outdoor installation. Also, 120 volt AC power must be available. The ease of routing the three-wire cable from the sensing probe should be considered when deciding the location of the panel. The control panel is usually attached to the wall with screws.

Improper installation is the No. 1 reason for system malfunction. Please use caution when installing the sensing probe to assure a properly operating Drive-Alert.

The probe's sensor is a coil of wire wrapped around an iron rod. Its resistance is 700-1100 ohms. The red and black wires connect to the coil. It is encapsulated in epoxy to protect it from physical damage and moisture.

**DO NOT CUT OR NICK THE CABLE JACKET!**

**If moisture enters, false alarms will be the result!**

**Mier HIGHLY recommends burying the cable within 1/2-inch PVC pipe for added protection to the cable.**

The cable is made with an extra thick outer cover. There is a foil wrapper surrounding the red and black wires. There is a silver (bare) wire in the foil. False alarms will occur if moisture gets into the foil wrapper. Nicks in the outer cover and improper splices allow moisture to enter the cable. As moisture enters the cable, the resistance decreases. Resistance between the red or black wire to the shield wire must be infinite. (Use meter with ability to read resistance above 20 million megohms).

The ideal installation is without any splices. The use of cable other than that which is designed for the Drive-Alert is undesirable. Improper splices and unsuitable cable are major causes of false alarms. If splicing is unavoidable, splice the cable using a 3M SLiC-TM SPLICE KIT, or equivalent. The splice kit is available from Mier Products.

The sensing probe does not know if it is in or out of the ground, but it must remain absolutely motionless. Most probes are buried 6 inches deep and parallel to the driveway. Be sure to protect it from physical damage.

The cable is made for direct burial in the ground. Do whatever is necessary to protect it from physical damage to the outer cover, such as using 1/2-inch PVC pipe.

The probe responds to changes in the magnetic field around it. The signal produced by the coil is a few micro volts for a fraction of a second. The probe and cable must not be within 20 feet of electric wires because they have changing magnetic fields of their own. Never bury the sensor in the same trench with other electrical wires, including telephone wires and wires for lights, bells, etc.

You may wish to place a sensing probe atop the ground in the general area of where you wish to bury it, and connect the cable to the control panel. This will allow you to TEST the system in application BEFORE final installation. It would be acceptable to leave the sensing probe and cable above the ground for a couple of days, but make certain it is not damaged during this period. This method should not be used permanently. See OPERATIONS INSTRUCTIONS for adjustments which may be necessary.

The burial of the probe is ideal in the center of the area being monitored, but often is not practical. If a new driveway is being put in, the sensing probe could be buried a minimum of 12-24 inches deep. In case you wish to place the sensor in the center of the drive, the cable and sensing probe could be placed in a 1 1/2 inch piece of PVC to provide protection. The cable should also be protected whenever vehicles move over it.

The usual installation of the sensing probe is parallel to an already existing driveway. In this case, the probe can be buried 6 inches deep, and the cable simply placed below the grass line. However, if vehicles are going to travel directly over the probe and cable, they should be buried deeper.

The sensing probe may be placed up to 5,000 feet from the Control Panel. Up to 4 sensing probes can be attached to one panel, but each additional probe reduces every probe's ability to detect. The Drive-Alert will not know which sensing probe detects a vehicle.



# INSTALLATION page 2 of 2

When more than 1 probe is used, connect the red and black wires in series. Connect the silver wires in parallel. The red wire from one cable is soldered to a black wire from another cable. The remaining red wire & black wire are attached to the Drive-Alert terminals. All silver wires are attached to the Drive-Alert.

Keep the probe, cable, and control panel at least 8 feet away from heavy power lines, power panels, motors, arcing or sparking machinery, and radio transmitters. In some cases, moving the panel and/or cable a few feet can solve interference problems.

FIGURE 1 illustrates the contacts on the bottom of the DA-500 Control Panel, with the sensor correctly attached.

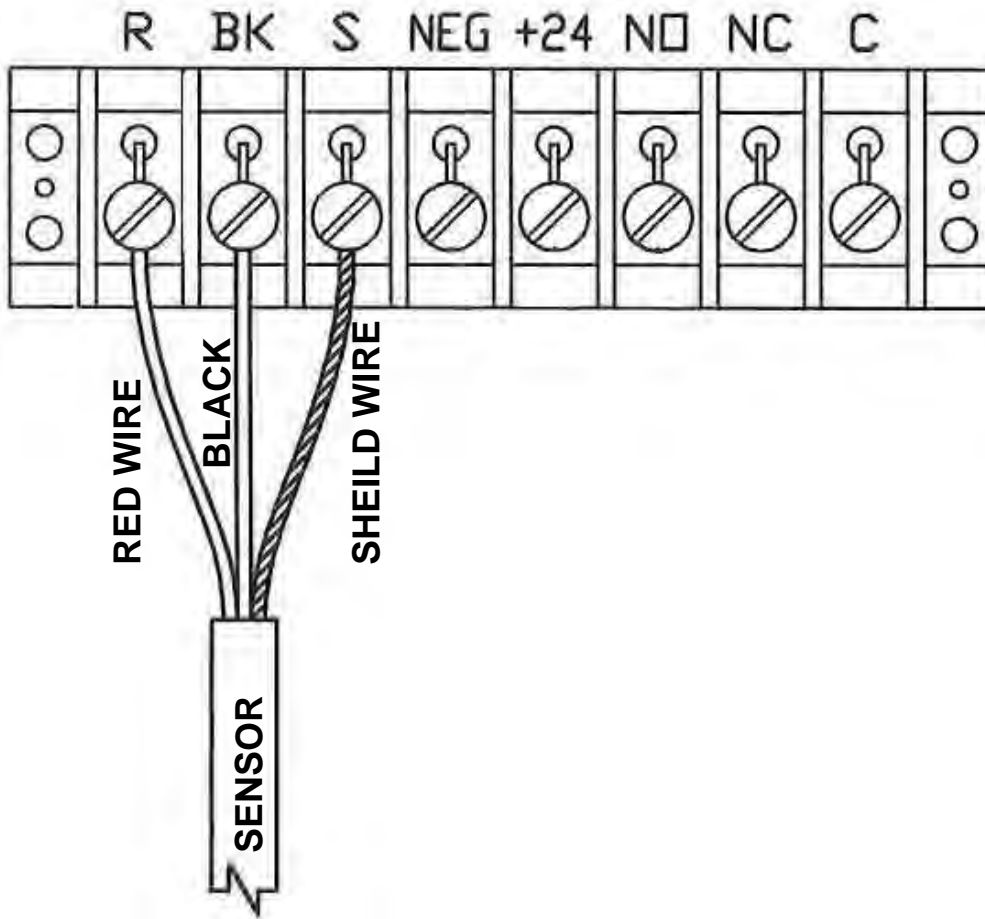


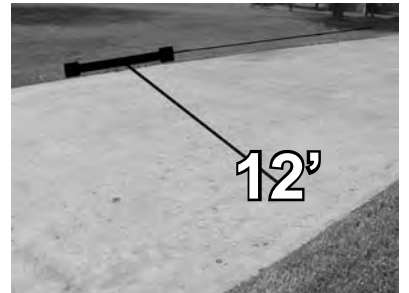
FIGURE 1



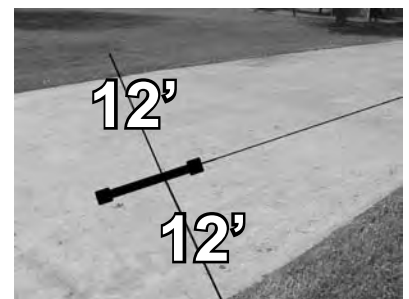
The sensing probe is a 1" x 12" cylinder containing a sealed sensor. Be cautious when handling the sensor and particularly careful to not nick the cable attached to it.



Bury the probe at least 6" deep.



A typical installation is the probe 6 inches deep parallel to drive, which will allow the probe to "sense" 12' across the driveway.



The ideal installation allows you to extend your detection range by installing the sensor under the center of drive.

The Drive-Alert is adjusted at the factory for maximum sensitivity for the probe and minimum time for the whistle. To adjust these, open the control panel and adjust the small pots according to the diagram on the inside cover (see FIGURE 2). The whistle "timer adjust" is adjustable from 1-12 seconds and the LED 3 will light.

When first plugged in, the red blanker LED 2 will remain on for only 1 minute, and the Drive-Alert will be muted for approximately 1 minute each time the electrical power is turned on. It provides time for the electronic circuits to initialize.

During normal operation, the noise blanker detects unwanted electrical interference and mutes the Drive-Alert for a few seconds. It has been adjusted at the factory. The blanker light should be off during normal operation.

To test the Control Panel, it is possible to rub your finger simultaneously on the three terminals to which the sensing probe is attached. This should cause the system to go into false alarm. This will occur with or without the sensing probe attached. Be sure the terminal screws are tight while making the test. If the system responds to this test, in almost all instances it indicates a properly functioning control panel.

If false alarms occur, remove the sensing probe wires from the Drive-Alert terminals. Let the power remain turned on to the control panel. If the false alarm stops, then the most likely cause of the problem is moisture in the sensing probe cable. Radio transmitters, cell phones, cordless phones, and wireless modems within 10 feet of the control panel may cause false alarms.

Additional devices can be attached to the Drive-Alert on its terminals at the bottom of the control panel. When the whistle switch is turned off, the Drive-Alert terminals can switch customer provided electrical current up to 5 AMPS. Never attach any device that puts more than 30 volts on the Drive-Alert terminals. When the whistle switch is turned on, the Drive-Alert terminals have available 24 VDC at 100 MA. Refer to the diagrams in this manual for hookup instructions.

Mier Products has a hard-wired "timer control" accessory available. The DA-505 Timer Control attaches to the Drive-Alert terminals. This Timer Control is adjustable from 45 seconds to 45 minutes. It switches up to one thousand watts of 115 volt power for outside lights. Mier Products also has a hard-wired chime available. The DA-655 Chime with Volume Control is the most popular accessory for the DA-500, and is highly recommended for drive-up window or business applications. Mier also has a wireless "timer control" kit (DA-606LK) which adjusts from 45 seconds to 45 minutes and includes a DA-071 Light Switch and DA-072 Lamp Module to control lights as an alert in addition to the audible alert. Furthermore, Mier has a wireless chime transmitter (DA-066) which triggers wireless DA-068 Plug-in Chimes and DA-070 Battery-powered portable chimes.

**Along with Mier's accessories, the DA-500 can also trigger your other devices such as surveillance, bells, sirens, signs, gates, and much more!**

## DA-500 CONTROL PANEL ADJUSTMENTS

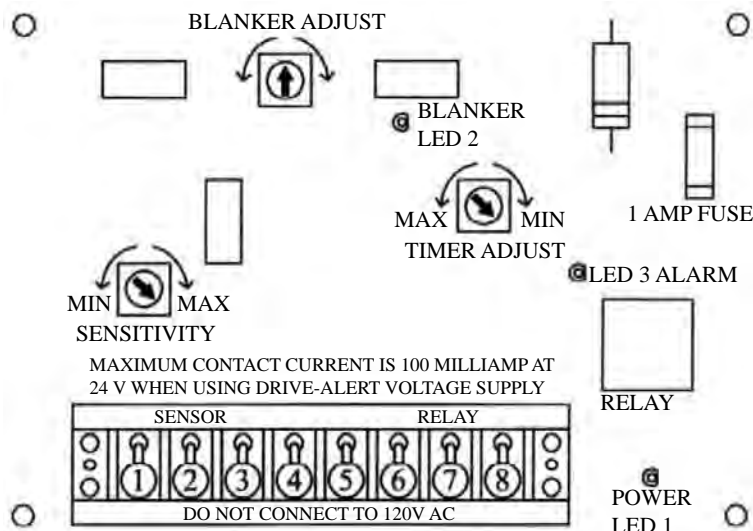
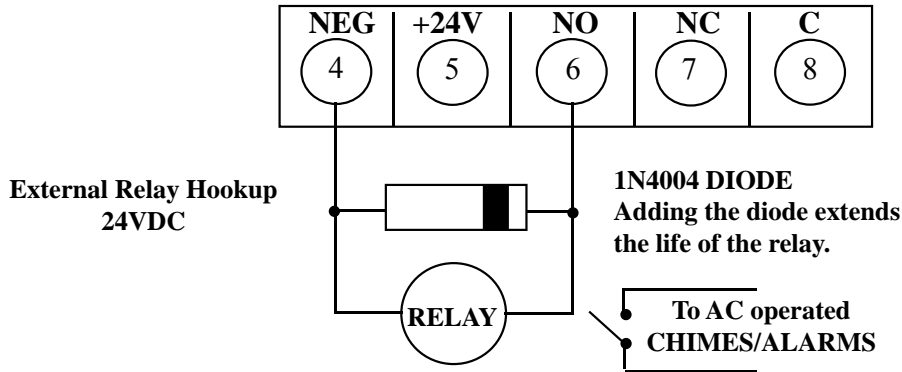
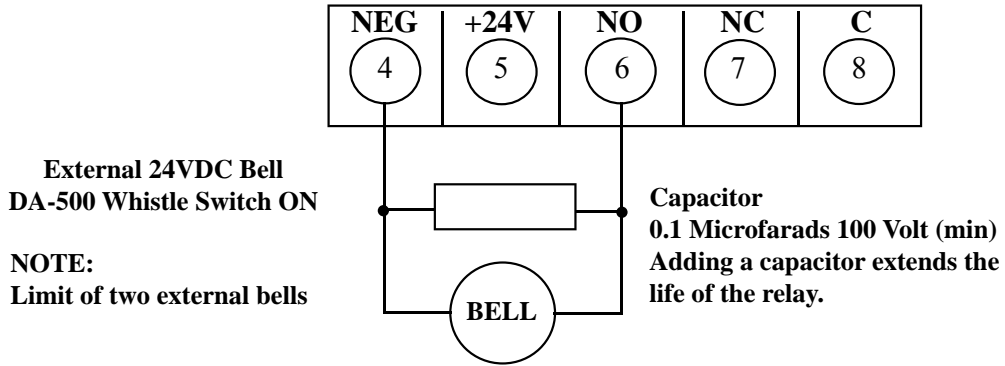


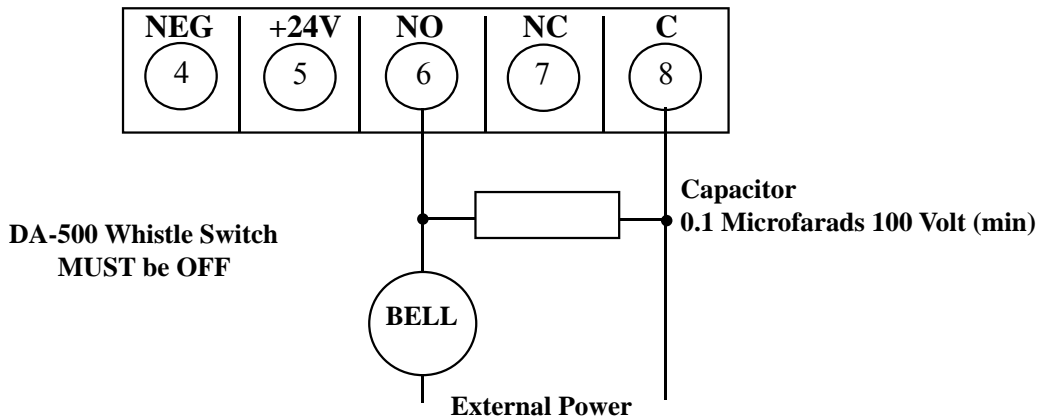
FIGURE 2

# CONTROLLING EXTERNAL ALARMS & CHIMES



**NOTE:** If internal piezo whistle is not wanted, move the DA-500 Whistle Switch to the OFF position and connect the jumper between +24 and the C Terminal

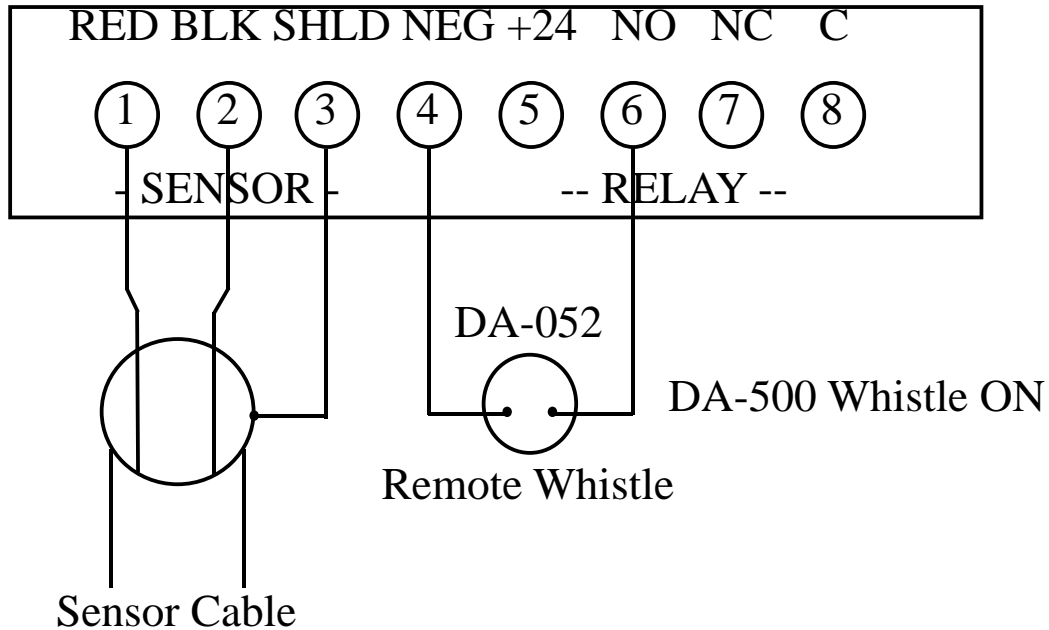
## CONNECTION USING DRY CONTACTS & EXTERNAL POWER



Maximum current limited to 1 AMPERE  
Maximum Voltage - 24 VOLTS (DO NOT apply 120VAC to terminals)

RED	BLK	SHLD	NEG	+24V	NO	NC	C
UNREG							
--- SENSOR ---				--- RELAY ---			
1	2	3	4	5	6	7	8
<b>DO NOT CONNECT TO 120V AC</b>							

## DA-500 Sensor and Remote DA-052V Whistle Connection



Note: Limit of 10 Whistles

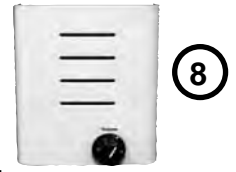
### Model DA-500 Drive-Alert Contents

- Solid-state Master Control Panel
- Electronic whistle with "on-off" switch
- Red LED power-on indicator
- UL listed transformer and cord
- 100 feet of two-conductor shielded direct burial cable; other lengths available
- Weatherproof sensor
- SPDT relay output available

### Specifications

- Input -- 120 VAC, 50-60Hz, 3.6 Watts
- Output -- 24 VDC at 100 Milliamps
- Surge protected from transients
- Adjustable sensor sensitivity
- Adjustable time control for electronic whistle
- Operating temperature -- 20 degree F to 160 degree F
- Provisions for activating optional timer control
- Weight -- six (6) pounds





## DA-655 Chime Installation Instructions

The DA-655 CHIME WITH VOLUME CONTROL is an optional feature for the Mier Products DA-500 and DA-600 Drive-Alert vehicle detection systems. When wired to the Drive-Alert master control panel, it will sound a chime note each time the DA-500 or DA-600 detects a vehicle. The DA-500 and DA-600 time adjustment can be changed to allow for a longer period of time between chime sounds with repeating vehicle detection. The CHIME WITH VOLUME includes an on-off switch and volume control.

### Easy Installation

1. Remove the two #6 sheet metal screws from the side of the chime chassis and pull the base off the speaker enclosure.
2. Mount the chime chassis base within 10 feet of the DA-500 or DA-600 master control panel. The chassis base has holes for a standard wall outlet box. The Chime is supplied with 10 feet of 4 conductor wire that connects to the master control panel.

3. Assemble the chime speaker enclosure to the chassis base.

4. Connect the 4 conductor wire to the master control panel as follows:
  - 1) RED to +24 V terminal
  - 2) BLACK to NEG terminal (DA-500), or GND terminal (DA-600)
  - 3) Leave the GREEN AND WHITE wires disconnected for now

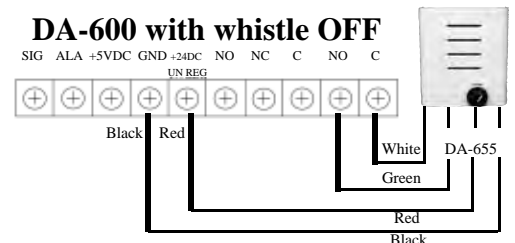
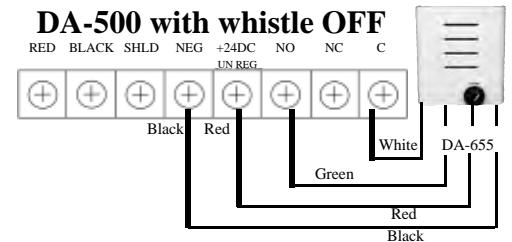
5. Turn the **WHISTLE SWITCH** on the DA-500 or DA-600 master control panel to the **OFF** position. **IMPORTANT: This whistle switch must be turned off to use the DA-655 chime.**

6. Plug the master control panel into a 115 VAC outlet.

7. The chime should be turned on and adjusted for about 75% volume. Momentarily touch the GREEN and WHITE wires together to trigger the chime. Repeat as needed to set the chime volume for the desired level.

8. After the volume is set, connect the GREEN and WHITE wires as follows:
  - 1) GREEN to NO, terminal #6
  - 2) WHITE to C, terminal #8

9. Test the system by tripping the master control panel either with a vehicle test or using a manual technique described in the master control panel documentation (DA-500 or DA-600).



## The DA-655 works with any Drive-Alert Model

**DA-500**



**DA-600**



**DA-605P**



## Mier Products' Drive-Alert Technical Support

Mier Products, Inc. provides free telephone and email technical support for all of our Drive-Alert vehicle detection systems. Call us at **800-473-0213** between the hours of 8:00 am and 5:00 pm EST, send an email to [info@mierproducts.com](mailto:info@mierproducts.com), or download our Cut-Sheets, Instruction Manuals, or FAQs from our website:

[www.mierproducts.com](http://www.mierproducts.com)

### Mier Products' Drive-Alert Warranty **Limited Warranty for Drive-Alert Models and Accessories** **Manufactured by Mier Products, Inc.**

Mier Products, Inc.'s Limited Warranty Program for Drive-Alert models and accessories protects the original owner for one year from the date of purchase against defects in original parts or workmanship. Mier Products, Inc. agrees to repair or replace parts (Mier's option) that are deemed defective by our Quality Control Team, without charge for parts or labor, if the defective unit is returned prepaid to Mier Products, Inc., Kokomo, IN, 46901, within the one-year period. Close inspection at the time of receipt by the customer will quickly determine product quality. Thus, Mier Products, Inc. recommends inspection of Drive-Alert models and accessories immediately upon receipt, *before installation or driving to an installation site*, and contacting Mier Products, Inc. if quality issues arise.

NOTE: Sensors and cables *that have been buried* are no longer covered. Wireless sensors that have been sitting in Flooded areas or standing water are not covered.

Mier Products, Inc. does not assume responsibility for claims or damages caused by improper installation or use of these products, accessories, and/or products connected to them. Mier Products, Inc. does not assume responsibility for damages to these products or their accessories due to shipping damage or damage occurring while in a customer's warehouse and/or possession. Mier Products, Inc. does not assume responsibility for damage due to accident, faulty wiring, overload of Drive-Alert or Drive-Alert accessory output, or components attached to the Drive-Alert parts. Drive-Alert accessories and parts built by other OEMs (including but not limited to chimes, lamp modules, light switches, bells, splice kits) are covered under their respective OEM warranties. Drive-Alert models and accessories must be shipped, handled, stored, and installed with strict adherence to OEM installation instructions.

This warranty constitutes the entire warranty with respect to Mier's Drive-Alert Models and Accessories and IS IN LIEU OF ALL OTHERS, EXPRESSED OR IMPLIED, INCLUDING ANY WARRANTY OR MERCHANTABILITY AND WARRANTY OF FITNESS FOR A PARTICULAR PURPOSE AND IN NO EVENT IS MIER PRODUCTS, INC., OR IT'S OEM PARTNERS, RESPONSIBLE FOR ANY CONSEQUENTIAL DAMAGES OF ANY NATURE WHATSOEVER.

Any warranty OR sales questions should be directed to Mier Products at 800-473-0213, or via e-mail to [info@mierproducts.com](mailto:info@mierproducts.com)

Repair work not covered by this Warranty is available for a nominal charge.



**800-473-0213 | [info@mierproducts.com](mailto:info@mierproducts.com) | [www.mierproducts.com](http://www.mierproducts.com)**

Wireless Vehicle Detection | Buried Sensor Systems | Driveway Alarms | Drive-Up Window Detection | Instrument Boxes | DVR & CPU Lockboxes  
 Flush-Mount Cabinets | NEMA Outdoor Enclosures | NEMA Temperature Controlled Enclosures | NEMA Rack Enclosures | Rack Shelves and  
 Drawers | NEMA/UL Non-Metallic Enclosures | Power Supply Boxes | Siren/Speaker Cabinets | Bell Boxes | Battery Cabinets | Transformer  
 Enclosures | Custom Enclosures and Fabrication | Custom Graphic Screening and Colors



# DA-500 DRIVE-ALERT TROUBLESHOOTING TREE

Step 1 - Check to make sure the Power Light is on. If not, replace the internal 1A fuse, or send to Mier Products for repair.

Step 2 - Make sure the sensor is attached correctly and securely to the control panel.

Step 3 - Make sure the sensor is located close enough to detect moving vehicles.

Step 4 - Make sure the sensor is at least 20 feet away from underground or overhead power/phone lines or an invisible fence, and the control panel is at least 15 feet away from cellular or cordless phones, wireless routers, etc.

Step 5 - Make sure the sensor is at least 50 feet away from the street/road traffic to prevent false alarms.

Step 6 - Make sure there are no nicks or cuts in the cable allowing moisture to get inside and cause false alarms.

