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Mier Vehicle Detection System

Revised: 04/26/2017
PN: 00900291

Meir Vehicle Detector Manual

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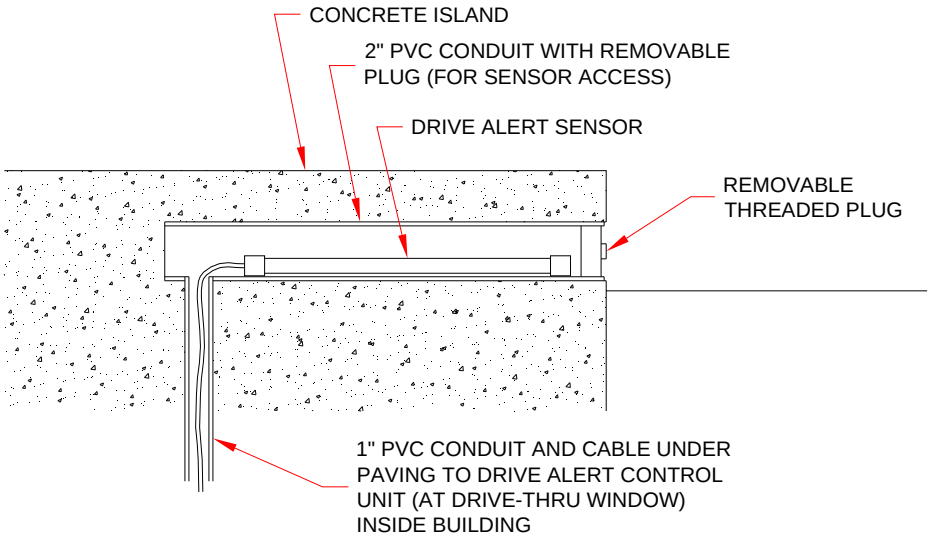
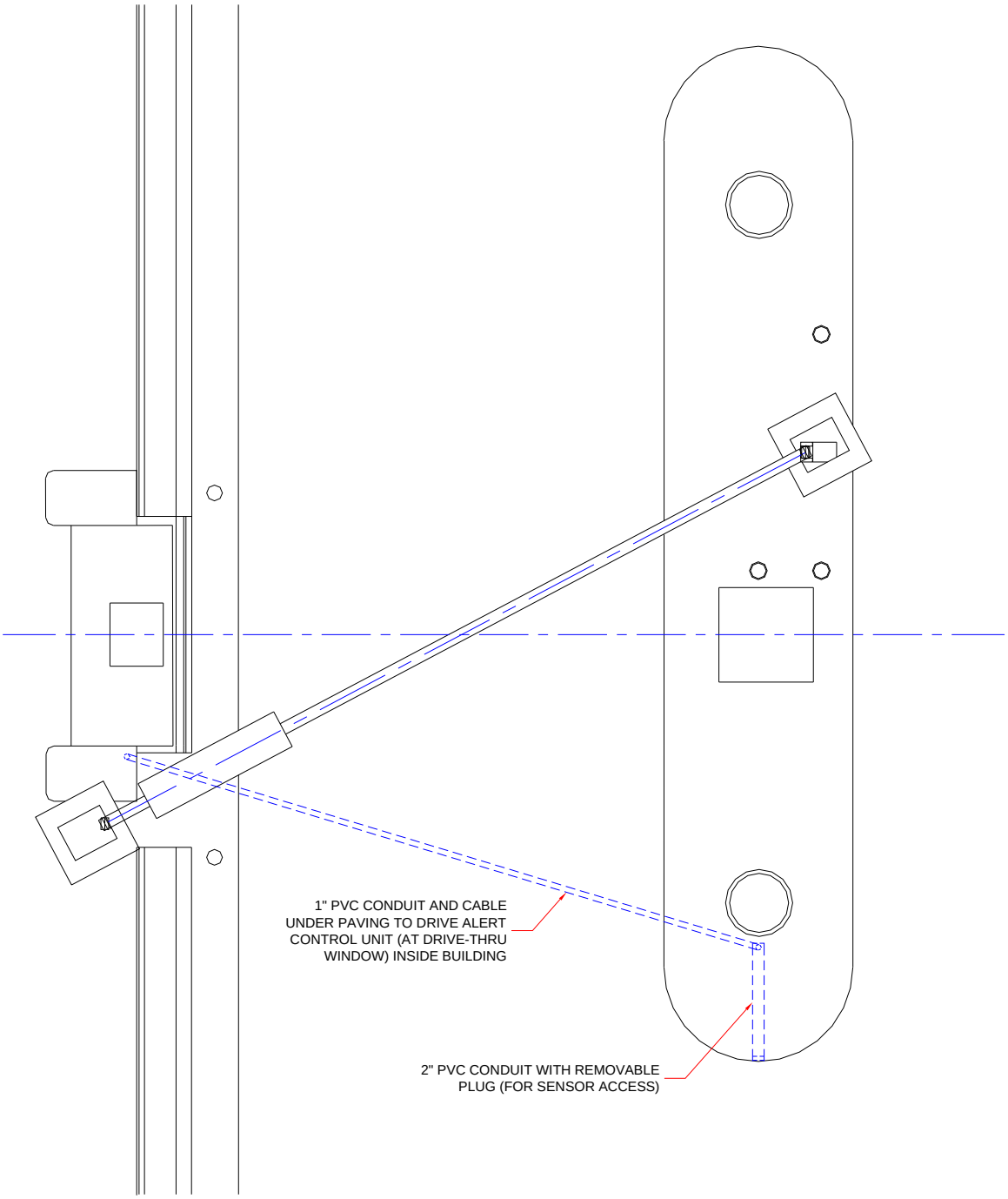
GENERAL NOTES

- At Walgreen's locations, the sensor is located in the end of the drive-thru island between the first and second lane. Access to the sensor is by removing the 2 inch threaded PVC pipe plug. The sensors are sensitive to moisture and movement. If the sensor moves inside of the pipe, the system will false trip. We are supplying sabots to stabilize the sensor in the pipe.
- The control is mounted under the drawer for the first lane.
- The chime can be in various locations from under the drawer by the control, to above the drop ceiling, or on the wall in the pharmacy.
- The standard sensor cable length is 100 feet. Some installers did not cut the cable to length but simply coiled the extra cable up under the drawer. The system is extremely sensitive to electrical interference. The cable needs to be cut to a reasonable length.
- Mier, the manufacturer of the vehicle detection system, recommends a .1uf capacitor across the relay contacts. We have not found any capacitors installed. This capacitor not only snubs the arc across the contacts but also reduces EMI interference with the controller. Our wiring harness includes the recommended .1uf capacitor.
- There is an internal "whistler" in the control. Do not use the internal whistler as it stays on much too long and disrupts communication in the drive-thru.
- The typical annunciator is a residential door chime. The chime sounds once when the control activates it. It cannot sound again until the control resets and subsequently is activated again. We recommend installing the annunciator under the drawer.

Sensor Location at Island



Sensor Conduit Routing



INSTALLATION *page 1 of 2*

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 DC 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 megaohms).

The ideal installation is without any splices. The use of cable other than that which is designed for the Drive-Alert is undesirable and voids the warranty. 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 (available from Mier Products), or equivalent.

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, and that it is held in place so it will not move. 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 sensitivity and the distance it is able 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, wire the units in parallel at the terminals on the DA-500 control panel. DO NOT CUT/SPLICE the cables: doing so may allow moisture from entering the cable and causing problems such as false alarms. (See Figure 2)

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.

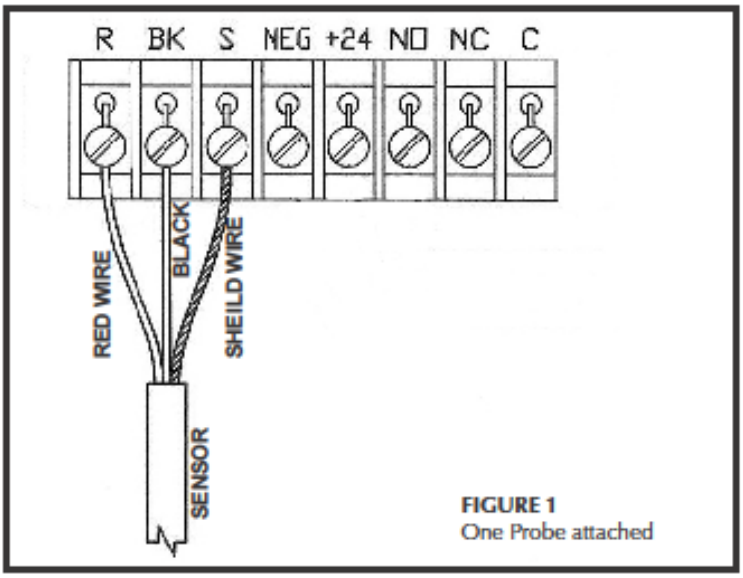


FIGURE 1
One Probe attached

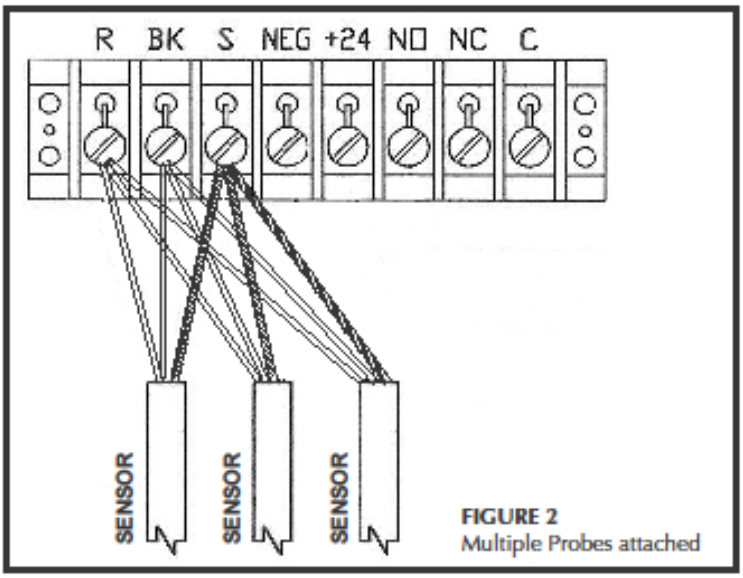
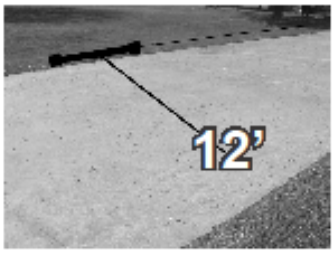


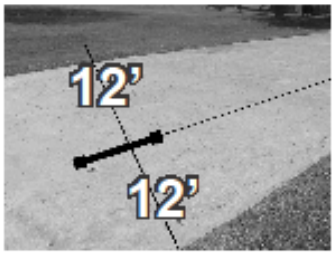
FIGURE 2
Multiple Probes attached

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.

OPERATION INSTRUCTIONS

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 fron 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 DC 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 chime transmitter (DA-066) which triggers wireless DA-068 Plug-in Chimes and DA-070 Battery-powered portable chimes.

NOTE: **When using multiple accessories, add a DA-500LKA which provides additional relay contacts to a DA-500.**

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

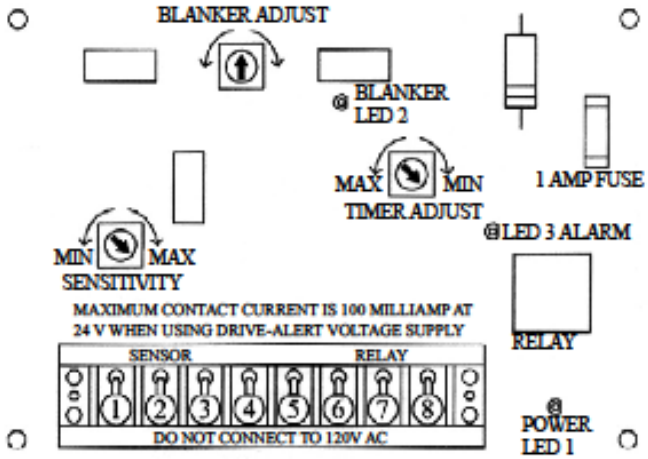
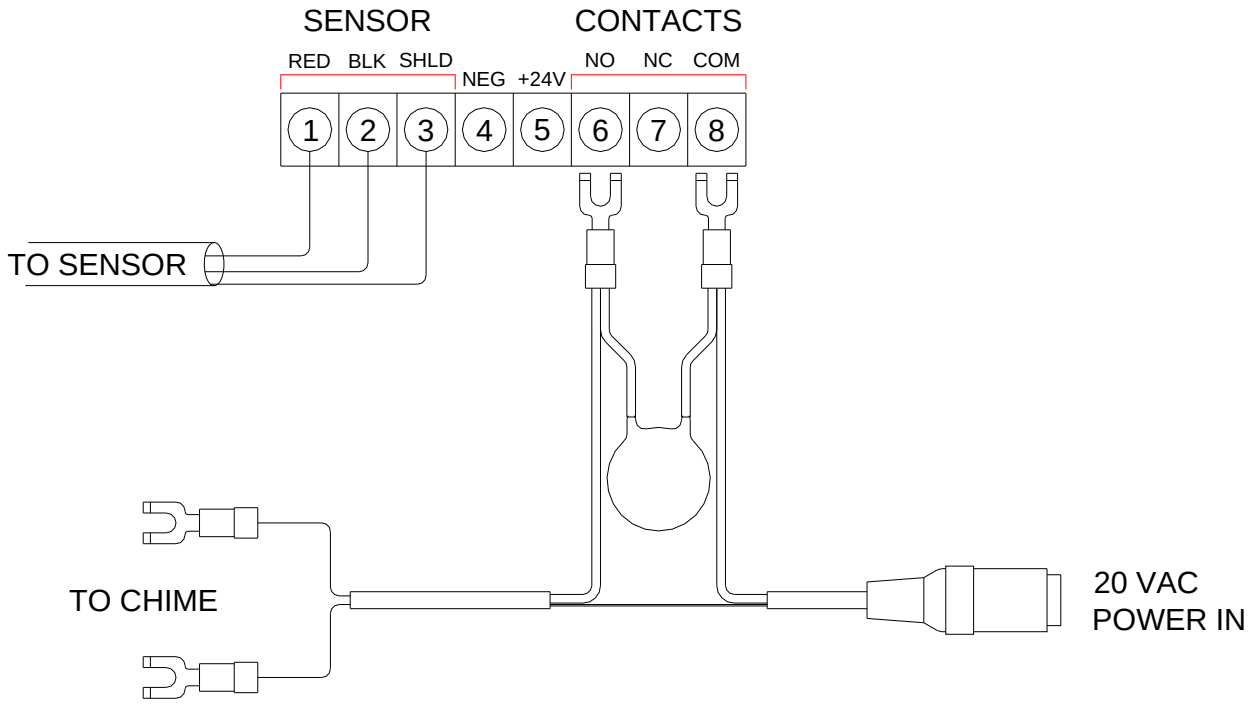


FIGURE 2

Controller Wiring Diagram



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**, or download our Cut-Sheets, Instruction Manuals, or FAQs from our website:

www.mierproducts.com