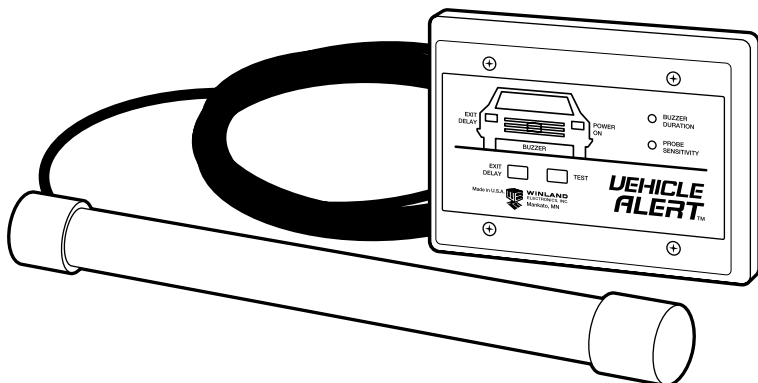




WINLAND
ELECTRONICS, INC.

VEHICLE ALERT™

INSTALLATION / OPERATION INSTRUCTIONS



Vehicle Alert console with cable and probe

CONTENTS FOR VAL-1

- | | | | |
|---|---|---|-----------------------------------|
| 1 | Vehicle Alert Console | 2 | Screws, slotted standard 6 x 3/4" |
| 1 | Vehicle Alert Probe with 100' cable (VAP-100) | 1 | UAL Connector Set |
| 1 | 12 V DC Power Supply (12VDCT) | 4 | Screws, Phillips 6-32 x 1 1/2" |
| 1 | 3-Gang Mounting Box | 1 | Output Cable Assembly |
| 2 | Wall anchors, 6-34" | 1 | Installation Manual |

CONTENTS FOR VAL-C

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|---|--------------------------------|---|-----------------------|
| 1 | Vehicle Alert Console | 1 | 3-Gang Mounting Box |
| 1 | UAL Connector Set | 1 | Output Cable Assembly |
| 4 | Screws, Phillips 6-32 x 1 1/2" | 1 | Installation Manual |

To insure proper operation, test weekly.

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Z1882 Rev E (08/2012)

SYSTEM OVERVIEW

The Vehicle Alert is a simple to use vehicle motion detection system that operates on the principle that any moving ferrous metal object will distort the Earth's magnetic field to some degree. The technology used to measure this distortion is one of the most reliable forms of outdoor protection available. Unlike other outdoor motion detectors that sense heat, vibration or change in position of an object, the Vehicle Alert will sense only moving iron or steel. This makes the Vehicle Alert a selective sensor, reducing the possibility of false alarms from animals, falling tree branches, or people in an outdoor environment. By selectively placing the Vehicle Alert probe, you can detect vehicles entering or leaving an area as well as the unauthorized movement of a parked vehicle such as your car, a boat, or motor home. Objects not constructed of iron or steel can also be monitored by equipping them with a large magnet. When the object is moved past the probe, the Vehicle Alert will activate. Follow the instructions for temporary installation and try your own ideas such as monitoring the opening of steel garage doors or the movement of other selected objects.

Once power is applied to the control console, a built-in start-up interval activates the six-minute Exit Delay. Both of the LEDs on the Vehicle Alert console should be on. At this time, the Vehicle Alert is unable to sound an alarm. Once the Exit Delay indicator has gone out, the unit is active. Pressing the Test button on the front of the console, will sound the alarm and the relay outputs will switch. The buzzer time is adjustable. Refer to the Final Checkout section of this manual to set the duration.

The Exit Delay button is used to disable the Vehicle Alert for a period of approximately six minutes. This delay can be used to allow a vehicle to leave the monitored area without activating the buzzer or any accessories connected to the Vehicle Alert. Likewise, if the lawn is being mowed or other work is being done in the area of the probe, the Exit Delay can be used to disable the console for short periods of time. Lightning storms that are close to the location of the probe can cause a disturbance in the area that the Vehicle Alert is monitoring. The Exit Delay can be used to disable the console until the storm passes. If the console needs to be disabled for longer periods of time, unplug the power supply from the wall outlet. After the disturbance has passed, plug the power supply back in and allow the Exit Delay timer to reset. The console will again be operational.

If more than one location needs to be monitored, one additional probe can be connected to the Vehicle Alert console. The addition of a second probe, however, will result in a decreased monitoring area for both probes.

SPECIFICATIONS

Power Requirement	10 to 14VDC @ 100mA
Buzzer	88dB @ 30 cm @ 12 VDC; continuous
Exit Delay	6 minutes (fixed)
Auxiliary Relay	2 Form A (N.O.) 500 mA @ 24 VDC/VAC
Cable	Direct burial 22 AWG shielded twisted pair with ground (drain) wire
Max Number of Probes	2
Max Cable Run	2,500' (762 m)
Console Operating Range	32 to 132° F (0 to 55° C); non-condensing environments (indoor only)
Console Weight	0.7 lbs (0.32 kg)
Console Dimensions	6.55 x 4.70 x 1" (16.6 x 11.9 x 2.54 cm)
Console Mounting	Standard 3-gang electrical box

Step 1: Probe and Console Location Considerations

Find a convenient location for the Vehicle Alert console with the following recommendations in mind:

- Place the console in a central location where its on-board buzzer can best be heard.
- Locate the console in a secure, indoor dry location with an ambient temperature of 32° to 132° F
- Locate the probe and console in locations that allow easy routing of wires.
- Locate the console at least 10 feet from radio transmitters or any other interference.
- To reduce possible of false alerts, do not bury the probe cable with other communication or electrical wiring.
- Install the console in a location that allows easy access to the Test and Exit Delay buttons.
- For proper installation and to provide protection against false alerts, the ground terminal G (FIGURE 5) on the console should be grounded to a cold water pipe or a copper ground rod. If neither is available, do not connect to an AC electrical ground.

WARNING: MAKE CERTAIN THE DIGGING AREA IS CLEAR OF ALL UNDERGROUND UTILITIES. CONTACT YOUR LOCAL UTILITIES BEFORE DIGGING. FAILURE TO DO THIS MAY RESULT IN SEVERE ELECTRICAL SHOCK, EXPLOSION, OR LOSS OF UTILITY SERVICE. ALSO, REPAIR CHARGES MAY BE CHARGEABLE TO YOU!

The cable may be buried at any depth that will not interfere with yard maintenance. Run the cable into the building housing the console. Leave enough cable at the probe to allow maintenance, if necessary.

Installation

IMPORTANT TIP:

Temporarily wire the system and connect the probe to the console. Refer to the console wiring instructions on Page 6 and do not connect any accessories at this point. Lay the probe out on the surface to test for proper operation at that location before burying it. This will save time digging unnecessary trenches and holes. When final positions of the probe and cable have been determined and final checkout has been completed, dig a trench and bury the cable all the way to the building housing the console.

Step 2. Probe Installation

The probe should be buried 6 to 8 inches below ground level, parallel to the driveway, and next to the traffic area to be monitored. The detection area is approximately 15 feet parallel to the probe when activated by a full size automobile. This area will vary depending on vehicle size and speed — the larger the vehicle the larger the area sensed, the smaller the vehicle the smaller the area sensed. The probe also should be away from high speed traffic, railroad tracks, motors, transformers, radio transmitters, sources of strong magnetic fields, or other moving iron or steel items. Otherwise, false alarms may result. Before burying the probe, review the Important Tip shown above. It may be necessary to turn the Probe Sensitivity control located on the front of the console if it seems to pick up stray signals.

In order for the system to work properly, the maximum distance between the probe and console should be less than 2,500 feet. If you do not have enough cable to complete the desired installation route, a Splice Kit (VA-SK) and additional cable (visit www.winland.com) may be purchased through your authorized Winland dealer. Both items are required to extend the cable length. Try to avoid multiple splices.

NOTE:

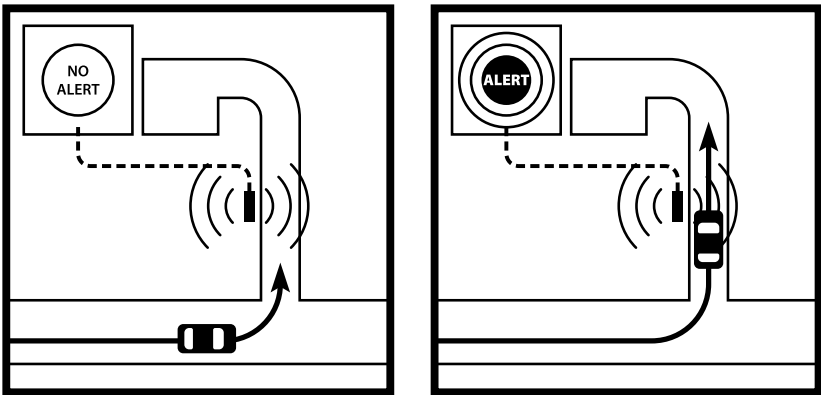
Do not make a bend in the cable of less than 2 inches. A bend of this size may cause the insulation to crack at the point of least radius. Consequently, water could seep into the wires and cause a corrosion problem.

Installing the Probe in Driveways Not Exceeding 20 Feet in Width

If the driveway to be monitored doesn't exceed 20 feet in width, the probe can be buried along side the driveway (FIGURE 1). The benefits of this are:

- Probe and cable need to be buried only 6 to 8 inches below ground level. The cable back to your home can be buried at any depth that will not interfere or be damaged by yard maintenance.
- Eliminates the possibility of crushing the probe when it is buried beneath unpaved driveways.
- Concrete or asphalt driveways do not have to be torn up to install the probe.

Figure 1



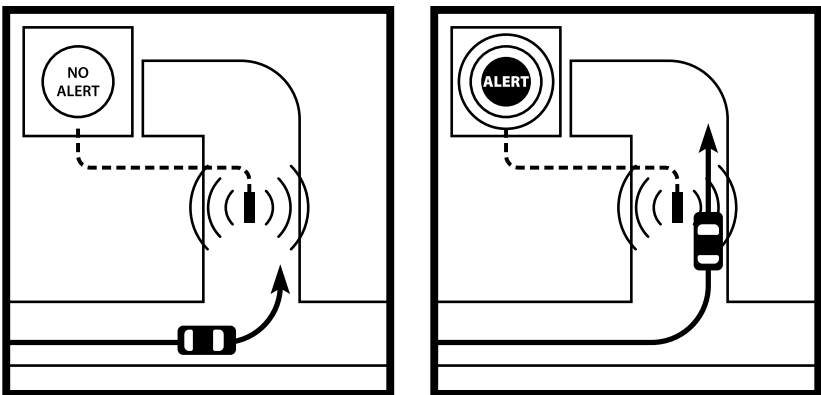
Vehicle approaches driveway unknown to building occupants.

Vehicle enters the probe zone and its presence is instantly announced.

Installing the Probe in Driveways Between 21 and 36 Feet in Width

When the driveway to be monitored is between 21 and 36 feet in width, the probe will need to be buried in the center of the driveway (FIGURE 2). Alternately, a probe can be placed on each side of the driveway (FIGURE 3).

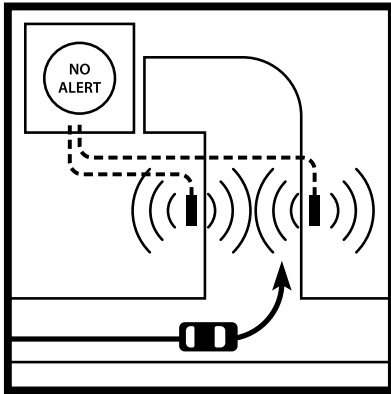
Figure 2



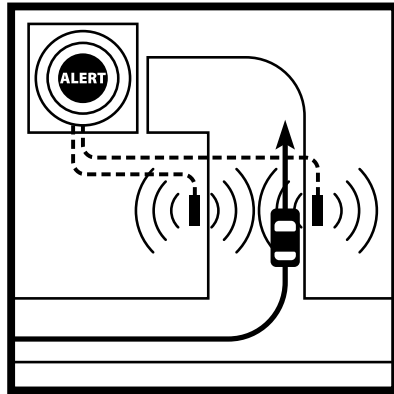
Vehicle approaches driveway unknown to building occupants.

Vehicle enters the probe zone and its presence is instantly announced.

Figure 3



Vehicle approaches driveway unknown to building occupants.



Vehicle enters the probe zone and its presence is instantly announced.

If burying a probe in the center of a gravel driveway, the probe and cable should be buried about 18 inches below ground level. To protect the probe and cable from being crushed, it is recommended that the probe and cable be placed inside a PVC pipe and packed with soft sand before the hole is filled. This precaution is highly recommended for gravel driveways that receive traffic from heavy vehicles.

Step 3: CONSOLE INSTALLATION

The Vehicle Alert console can be mounted either directly to a wall or to a standard 3-gang box (included with the VAL-1). Screw packets are included; but if mounting directly to a wall, use of wall anchors is recommended. Both a standard slotted screwdriver and a Phillips screwdriver are necessary for installation.

Option #1: Surface mounting without a mounting box

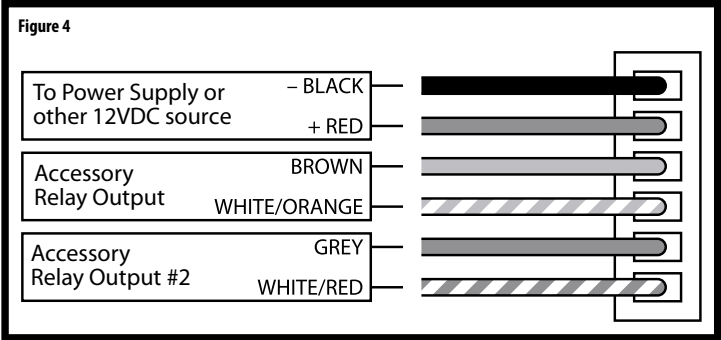
For soft walls (sheet rock, paneling, etc.), the preferred mounting method is to surface mount the console directly to the wall without a mounting box. For this option, drill a ½" diameter hole into the wall. This hole will provide access to your probe cable and 12-volt power wires. Next, carefully mark the location of the four corner screw holes on the Vehicle Alert console. Then drive four wall anchors (not included) into the locations and complete by securing the VAL-1 to the wall.

Option #2: Surface mounting with a mounting box

For installation in areas where no hollow interior walls are available or where surface mounting of the wiring is desired, a standard 3-gang surface mounting box can be used. Using the mounting box as a template, mark the position of the screw holes on the vertical surface you wish to mount to. Drive the screws (using included anchors if required) in your mounting surface, allowing approximately 1/16" between the screw head and the mounting surface. Engage key slots on the back box with the screw heads and press down. After completion of wiring, use the enclosed four Phillips screws to mount the Vehicle Alert console to the box.

Power Connections

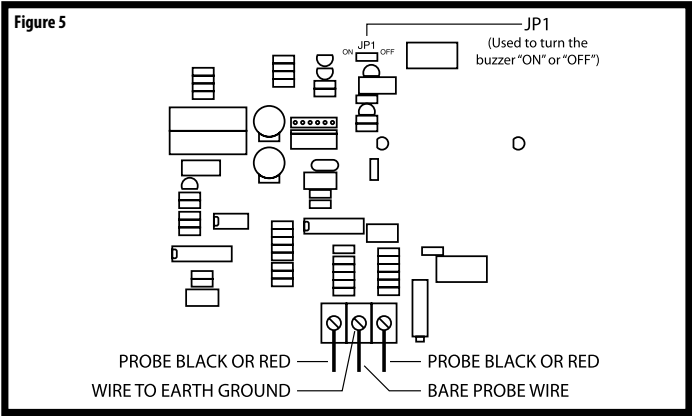
Before plugging in the 12VDC power supply to a wall outlet, connect the appropriate wires on the cable assembly to the power supply (FIGURE 4).



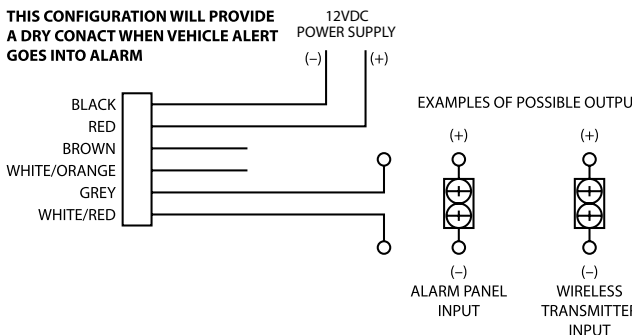
If using one of the five disk-shaped UAL connectors, neither wire should be stripped of its insulation. Insert the wire from the power supply positive lead marked (+) into one of the three small grooves. Push the wire all the way to the end of the connector. Take the red lead coming from the connector on the back of the Vehicle Alert console and push it into the other hole in the UAL connector. If using a remote buzzer (Model BZ-1), its positive connection should be made here, as well. Using pliers, squeeze the disk until it is firmly seated into the bottom of the UAL connector. Repeat using the negative (-) lead of the power supply and the black lead of the console connector. The other leads on the connector are used for the two Form A relay outputs, which come standard with the Vehicle Alert. These two relays can be used to trip other devices such as additional buzzers, X-10 devices, etc. If at this time you do not intend to use these optional accessories, cover the unused wires with tape to avoid shorting to the circuit board.

Probe Connections

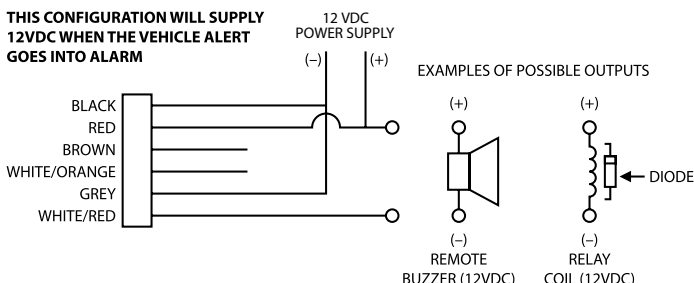
Connect the wires from the probe to the 3-position terminal block on the back of the Vehicle Alert console (FIGURE 5). Connect the bare drain wire to the terminal marked "G". Connect the red and black insulated wires to either of the two remaining terminals marked "S". It makes no difference which wire, red or black, connects to which "S" terminal. The ground terminal marked "G" on the console should be grounded to a cold water pipe or a copper ground rod. If neither is available do not connect to AC power ground. FAILURE TO GROUND THE UNIT WILL INCREASE THE POSSIBILITY OF FALSE ALARMS. See Probe Grounding on page 9 for important information on proper grounding.



THIS CONFIGURATION WILL PROVIDE A DRY CONTACT WHEN VEHICLE ALERT GOES INTO ALARM



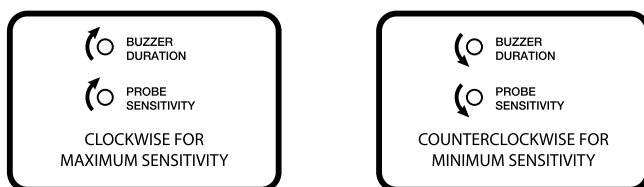
THIS CONFIGURATION WILL SUPPLY 12VDC WHEN THE VEHICLE ALERT GOES INTO ALARM



Final Checkout

Plug the power supply into a 120 VAC outlet. When power is first applied to the VAL, both the green “Exit Delay” light and the green “Power On” indicator will be lit. It will take about six minutes for the Exit Delay light to go out and allow the unit to become active. With the Exit Delay light off, the buzzer should sound when the “Test” button is pressed. If the duration of the buzzer is too long or too short, it can be adjusted by carefully inserting a small slotted screwdriver into the designated opening located on the front of the VAL console. Rotate the control to adjust the “Buzzer Duration” from 1 to 18 seconds.

Figure 6



Have someone move a steel shovel or other iron or steel object over the probe while you listen for the buzzer at the console. The buzzer should sound once or twice each time the probe is activated. Remember, if the Exit Delay light is on, the alarm will not sound. Next, have someone drive a vehicle past the area to be monitored. Check to see if the probe is far enough away from traffic areas that you do not want monitored or other sources of magnetic fields that may cause false alarms to occur. Adjust the “Probe Sensitivity” control (FIGURE 6) located on the front of the VAL console, as necessary. To adjust this control, carefully insert a small slotted screwdriver into the opening and rotate the control. When the Vehicle Alert console leaves the factory, the control is adjusted for maximum sensitivity (fully clockwise). To decrease the sensitivity, rotate the control counterclockwise. To help reduce false alarms, it is recommended that the sensitivity level be set to the minimum level needed to detect a vehicle. If the probe does not cover the area desired, you may need to move the probe closer to the driveway or add a second probe (FIGURE 3).

Troubleshooting

“Power On” indicator is not on.

- Check to make sure the power connections are properly made to the VAL console.
- If the power connections are correct, disconnect the 12 VDC power supply from the console by unplugging the wiring harness. Ensure that it is providing 12 VDC by measuring the power leads with a voltmeter.

Buzzer will not activate.

- Check for loose connections on the console terminal block. If the system has been unplugged and then plugged back in again, the green indicator light for the Exit Delay will reset and another six minutes must pass before the light is out and the unit is active.
- Ensure that jumper JP1 is not set to disable the buzzer (FIGURE 5).

“Test” button will activate the unit, but the probe will not.

- Check all connections to ensure they are still connected per Power Connections on page 6.
- Disconnect the probe from the console and measure the resistance of probe with an ohmmeter. A measurement from the red to the black probe wire should be between 750 and 850 ohms. If you do not obtain this reading, ensure that you're not touching both wires while measuring (or your body's resistance will also be read in parallel) and double check any splice locations. A measurement from either red or black to the bare wire should read “open,” or infinite resistance (∞).

Buzzer Sounds during lightning storms.

- Lightning storms are a potential source of magnetic field disturbance at the probe. If the unit is grounded according to the instructions above, there is nothing more that can be done to allow the unit to function during heavy lightning activity. The unit should be unplugged or, if a battery power supply has been installed, the battery should be disconnected until the storm has passed.

Buzzer sounds for no apparent reason (false alarms), and the probe sensitivity adjustment does not help.

- Disconnect the bare probe wire from the center screw of the terminal block leaving only the red and black wires connected to the terminal block.
- If false alarms still exist, and if the unit is earth grounded, there may be a grounding problem. Disconnect the earth ground wire (the wire that leads from the center screw on the terminal block to the earth ground in your home) from the unit.
- Verify that the bare wire (shield drain) shows no continuity to either of the signal wires. A measurement from either red or black to the bare wire should read “open,” or infinite resistance (∞).
- In some cases, false alarms can occur due to interference transmitted through power lines. A couple potential sources of this type of interference are motors and microwaves. These devices can occasionally put noise back on the power line which may get through the power supply and negatively influence the operation of the Vehicle Alert. This can be ruled out either by unplugging suspected “noisy” devices, moving them to a different circuit, or powering the console with battery power thereby removing its connection to AC power.

Special Applications

12 VDC battery power:

If battery power is desired, a 12 VDC battery capable of supplying 70 mA to the console plus capacity enough to supply any Vehicle Alert accessories can be used. Substitute the battery for the power supply (model 12VDCT) in the section labeled Power Connections.

No buzzer annunciation wanted:

On the back of the Vehicle Alert console, located on the top side, is a jumper labeled JP1 (FIGURE 5). If this connector is pulled up and moved to the right side of the connector (the jumper connecting the center pin and the outside pin together), the buzzer will be disabled. All other outputs for other accessories will remain working, including the remote buzzer output.

Wireless connections to remote accessories and buzzers:

The Winland Vehicle Alert works well with X-10® and Radio Shack® wireless modules for remote annunciation of vehicles in other rooms or buildings or to activate other wireless modules. In order for these devices to operate with the Vehicle Alert, they must accept a normally-open (N.O.), momentary, dry contact.

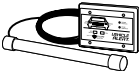
Probe Grounding

A proper probe ground is not only essential in helping to avoid false alarms, but necessary to comply with the NEC (National Electrical Code) as well as any applicable local codes. As of this writing, the following are NEC grounding requirements for a communications circuit:

- A Class 2 or Class 3 power supply must be used to power the Vehicle Alert console. The 12VDCT power supply provided with the VAL-1 is a Class 2 supply. If you are not using this supply, ensure that your power supply meets this requirement.
- The probe shield wire must be grounded as close as practicable to the building point of entrance.
- The ground wire must be insulated, not smaller than 14 AWG copper, and run in as straight a line as practicable to the grounding electrode.
- Connection must be made within 20 feet to the existing grounding electrode or grounding electrode system. If connection to the ground electrode cannot be made within 20 feet, a separate ground rod must be driven. This new ground rod must be bonded to the grounding electrode using a conductor not smaller than 6 AWG copper.
- The chosen grounding method must meet current NEC requirements defining a "grounding electrode." DO NOT SIMPLY CONNECT THIS TO THE NEAREST AC GROUND. A copper water pipe, conduit, or ground rod may be used if they meet the definition of a grounding electrode as defined by the NEC.
- NEC and local codes must be followed. For your safety, please consult a Licensed Electrical Contractor.

Accessories

Many accessories are available for the Vehicle Alert allowing custom installations to meet specific user requirements. Additional buzzers (Model BZ-1) can be located throughout your home or building. Since your Vehicle Alert contains two dry contact relay outputs, it can be connected directly to a wireless transmitter or to an existing security system. Consult your Vehicle Alert dealer or visit www.winland.com for further information.

	Model Number	Description
	VAL-1	Vehicle Alert Kit (Console, probe with 100' cable, 12VDCT)
	VAL-C	Vehicle Alert Console
	BZ-1	Remote Annunciator
		Probe with cable - visit www.winland.com for available lengths
	VA-SK	Vehicle Alert Splice Kit
	12 VDCT	12 VDC Power Supply (included with VAL-1)

ONE YEAR LIMITED WARRANTY

Winland Electronics, Inc. ("Winland") warrants to the end user/purchaser that each product of its manufacture shall be free from defects in material and factory workmanship for a period of one year from the date of purchase, when properly installed and operated under normal conditions according to Winland's instruction.

Winland's obligation under this warranty is limited to correcting, without charge, at its factory any part or parts thereof which shall be returned to the factory, by the original purchaser, transportation charges prepaid, within one year of the date of purchase and which upon examination, shall disclose to Winland's satisfaction to have been originally defective. Correction of such defects by repair to, or supplying replacements for, defective parts shall constitute fulfillment of all Winland's obligations to purchaser under this limited warranty. Repair service performed by Winland after one year from date of purchase will be for a reasonable service charge.

This limited warranty shall not apply to any of Winland's products which have been subject to misuse, negligence or accident or which have been repaired or altered outside of Winland's factory. The warranty is void if the Product's housing or cover is removed.

Winland shall not be liable for loss, damage or expense resulting, directly or indirectly, from the use of its products or any other cause.

This warranty shall be null and void in its entirety if: (i) the product is altered or modified in any way that is not consistent with the manufacturer's instructions, or (ii) the product is used with or connected to a device: (a) that such product is not intended to be used with or connected to, (b) is not otherwise consistent with the manufacturer's instructions, or (c) is not otherwise approved by the manufacturer.

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