ELECTRONIC ENGINEERING

Vehicle Detection Sensor

Ideal for solar application

Model: ATR-1000

NEW! Programmer for sensitivity adjustment.

General Information

While other companies lost their confidence in similar types of vehicle detectors, we at ECA are introducing our second advanced version, the ATR-1000, and that is due to the great success and demand we had for our first version of the vehicle motion detector we lounged in 2012.

The ATR-1000 operates by detecting changes in the magnetic field that occur when metal objects such as cars or trucks come close within the probe's range. The ATR-1000 is a direct burial probe placed parallel to a roadway or buried in a concrete or asphalt roadway and has the OPTION OF AJUSTING ITS SENSITIVITY BY ITS PROGRAMMER.

This new version probe has a sensitivity programmer that can be used to adjust the level of sensitivity of the unit and that will enable a radius detection of 1m' to 4m' range, depending on the sensitivity level adjusted to the unit. The sensitivity is also effected by the speed and size of the detected vehicle. The unit comes with a 10m' cable length and works within 9V to 24V Ac/Dc. Its internal relay with dry contacts of NO., NC., & COM. provides a pulse trigger when a vehicle has been detected.

This sensor can be used as an automatic exit in both commercial and residential applications and its low current consumption of 0.002mA makes it the best and the ideal solution for solar operated gates. This sensor can not be used as a presence detector.

PLEASE NOTE! You must allow 3-minute stabilization time for the unit to be ready for use after power is applied. It is possible that the detector will trigger during the power-up stabilization period and that is normal.

The sensitivity of the unit is a function of speed and size if the vehicle; the slower a vehicle moves, the closer the vehicle must pass the probe to trigger. The smaller the vehicle, the closer the vehicle must pass the probe to trigger.

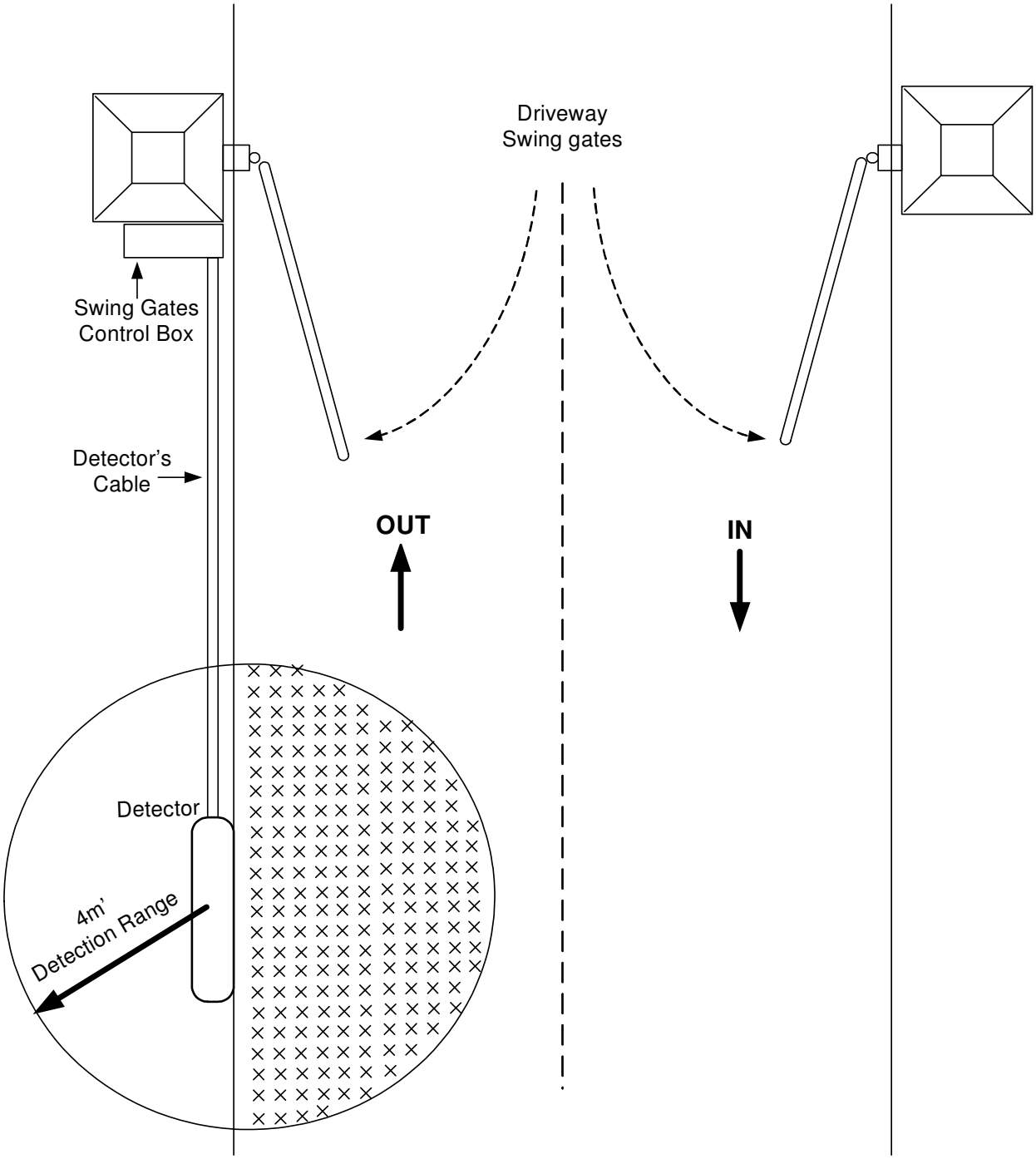
POWER SUPPLY: **9 - 25V DC / AC**
STAND-BY CURRENT CONSUMPTION: **0.002mA**

Note!

Do not exceed 41VDC or 29VAC.

Wire color	Description
RED	Power +
BLACK	Power -
GREEN	Relay common contact.
WHITE	Relay Normally Closed contact (N.C.)
BROWN	Relay Normally Open contact (N.O.)

Typical Swing Gates Installation



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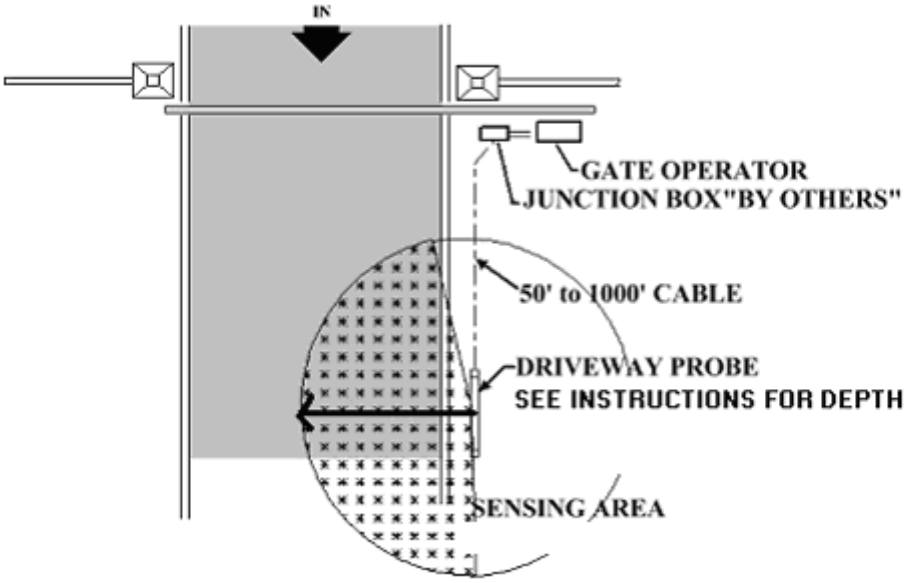
Typical Sliding Gate Installation



Probe Installation

- **STANDARD INSTALLATION – Bury the probe 25cm deep.**

- **When high PEDESTRIAN TRAFFIC – Bury the probe 60cm deep.**
  ATR-1000 is sensitive to metal objects that move through its field, including bicycles, horses, small vehicles or metal in shoes. In areas with high pedestrian traffic, the probe may be buried up to 60cm' deep to prevent false triggering.

- Do not install the Probe or lead wire near or parallel to:
  - Low voltage lighting wires
  - Telephone lines or intercom systems
  - Electric motors or control relays
  - Overhead power lines and transformers or underground power lines
  - Cell phone towers, TV towers or communications links
  - Moving Boom Gates, metal fences, metal gates or horses with metal shoes
  - Do not mount on any moving surface such as bridges or walkways that may vibrate under traffic
  - Underground water lines

- It is highly recommended that the cable be placed in plastic conduit (1 ½" I.D.) to prevent damage. If moisture enters the cable it will cause false triggering. When placing the probe in plastic conduit, use silicon and tape to assure that the probe does not move or vibrate. It is recommended that the conduit be sealed to prevent water from collecting in the conduit.
- The probe must always be installed in such a way that it remains completely motionless. Any movement will cause the probe to trigger.
- The detection distance is about 1-4m' at a speed of 10Km/Hour. At higher speeds, detection distance can exceed the 4m' on high level sensitivity adjustment.
- Before installation, place the probe parallel to the driveway in the desired location, apply power and allow 3 minutes setup for system to stabilize and only then connect the triggering wires.
- Drive the vehicle past the probe at a typical speed and to the far side of the roadway. Verify proper operation of the ATR-1000.
- Bury the probe approximately 25cm' deep (or 60cm' deep, see above) at this location and repeat the previous sensitivity check to verify proper operation.

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Sensitivity Adjustment by the Programmer

Use the programmer to set 10 different sensitivity levels to the unit. Simply plug the programmer into the harness of the unit and apply power. **Wait 3 minutes** and adjust the level of sensitivity required by tuning the level up or down as required while level 1 is the lowest and level 9 is the highest sensitivity. Level "0" turns the unit OFF. The selected level will be registered in the unit's memory until the programmer is connected once again for additional settings. The sensitivity would not change if the power is disconnected to the unit. The programmer can be removed and used for multiple installations, or left in place if tampering is not a concern. After the sensitivity is adjusted to the required level, just remove the programmer and plug the "bridge-plug" instead to the harness of the unit.

Troubleshooting

Symptom	Possible cause
False triggering	Electrical disturbances
	Damaged probe cable
	Moisture in the probe cable
	Movement in the probe's environment

Possible solutions

1. Verify that the earth ground connection is secure. If the connection is not secure, reconnect to the earth ground and retest the system.
2. Inspect the area around the probe for any metal object that may move such as signs or fences.
3. Disconnect the power and temporarily connect a 9V battery to the ATR-1000 and reconnect the probe. Wait 3 minutes for the system to stabilize. If the false triggering stops, consider using a separate power supply for the ATR-1000 such as a 240VAC to 12V Dc power pack (min. 100mA). Re-connect the probe and test the system.
4. If the false triggering continues, inspect the area around the probe to see if any metallic objects may be subject to any movement. These may include fences, flagpoles, signs, etc. Other possible causes are electrical power lines, electric motors and high power lighting.

Checking the ATR-1000 output contacts

1. Disconnect the output contacts from the operator.
2. Connect a Meter set to read ohms, to the COM and N.O. contacts. The DVM should read open (infinity). Move a metal tool over the length of the probe, and observe that the DVM reads less than 10 ohms.

Symptom	Possible cause
No detection	Minimum speed 8Km/H
	Bad connection
	Faulty power connection
	Failed relay or broken wire

ECA

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