



Application Note AN-6

AURATEK for Raised Cable Applications

Revision 1: January 2003

Introduction

One of ENCLOSURE's greatest assets is its ability to be installed in a variety of different locations and still remain dependable.

Application Note #1 displays how the cable should be elevated above a metallic roof surface to prevent interference. However the cable can be elevated in other applications apart from rooftops.

Two applications will be covered in this Application Note, first a raised cable and secondly on the inside of a coil of concertina or razor wire.

Installation for Raised Cable Applications

a) raised cable - Raised cable is most often needed when the cable is to be placed in an area that has standing or moving water on the surface of the ground part or all of the time.

It may also be required in a cable to cable configuration if the ground has a high saline or iron content.

Elevation - The sensor cable should be elevated 20 cm or 8" from the highest level of standing water it is to be installed in on non-metallic stand-offs. The entire zone must be elevated to ensure even detection, including 30

Movement - The stand-offs should be placed a minimum of 1 meter or 3 ft. apart to prevent any movement of the cable. The sensor cable should be fasted down or placed in non-metallic conduit so

that there is minimal movement from the wind. Movement of the cable must be restricted to ± 5 cm (± 2 inches) to minimize the chance of nuisance alarms.

Non-moving Metal Objects - The sensor cable should be installed at a minimum distance from the object equal to one half the height of the object.

Moving Metal Objects - The sensor cable should be installed at a minimum distance of four times the height of the moving metal object.

Metal Fence - The sensor should be installed at a minimum distance equal to one half the height of the fence.

Trees - Individual trees do not present a problem for ENCLOSURE. In wooded areas, if the trees are wet from rain and are blowing in the wind, there may be a reduction in the probability of detection.

b) Inside Concertina or Razor wire - This configuration supplements the physical barrier of the concertina wire with the ability to detect where activity is taking place along the wire.

Elevation - The sensor cable should be as close as possible to center inside the Concertina wire. It must be suspended securely by non-metallic material. At no point along the zone may the sensor cable or the lead in cable touch the concertina wire.

Movement - The non-metallic material supporting the cable should be placed a minimum of 1 meter or 3 ft. apart to prevent any movement of the cable. The sensor cable must be fasted down or

placed in non-metallic conduit so that there is minimal movement from the wind. Movement of the cable must be restricted to ± 5 cm (± 2 inches) to minimize the chance of nuisance alarms.

Non-moving Metal Objects - The sensor cable should be installed at a minimum distance from the object equal to one half the height of the object.

Moving Metal Objects - The sensor cable should be installed at a minimum distance of two times the height of the moving metal object.

Metal Fence - The sensor should be installed at a minimum distance equal to one half the height of the fence.

Trees - Individual trees do not present a problem for ENCLOSURE. In wooded areas, if the trees are wet from rain and are blowing in the wind, there may be a reduction in the probability of detection.

Interconnections

a) Processor Unit

The Processor Unit is supplied in a NEMA-4 weatherproof box.

b) Lead-in Cables

For Raised Cable, the lead in cable must be raised for at least 15 meters or 45 feet before connecting to the zone.

For Inside Concertina Wire, the lead in cable must be raised for at least 15 meters or 45 feet before connecting to the zone.

c) Antenna

Single Antenna - The (receiving/transmitting) antenna must have line of sight with the sensor cables. If the antenna is transmitting to the sensor cables, it should be located in the middle of the zone. If the sensor cable is transmitting to the

antenna, the antenna should be located at $\frac{3}{4}$ the length of the zone. In either case, a minimum setback distance of 15 m (50 ft) from the sensor cable is required. The minimum height of the antenna should be 5.0 m (17 ft).

Cable to Cable – The transmitting cable must be placed parallel to the receiving cable. The separation between the cables must be a minimum is somewhat dependent on the length of the zone. For shorter zones (< 30 meters or 100ft) the separation could be as little as 5m or 15ft. For longer zones (>30 meter or 100ft) the separation may have to be as large as 8m or 25 ft.

d) Wireless Alarm Annunciator

An optional spread spectrum wireless alarm annunciator can be supplied. With an operating range of 2.0 Km (1.2 miles), it is especially useful in rapid deployment portable applications.

Conclusion

Unlike many of the other outdoor perimeter detection sensors that can only be installed in one medium (air / buried / surface), ENCLOSURE operates with a high level of performance in all these applications. Its tremendous flexibility makes it the ideal sensor.

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