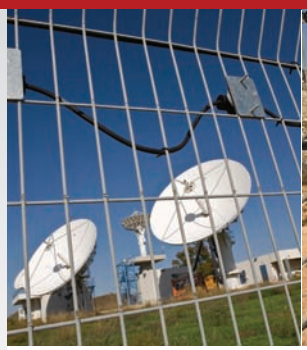
MAGAL S3
Security, Safety, Site management

BARRICADE II




Core features

- Locating resolution of 3 meters (10 ft.)
- Detection and location of simultaneous multiple intrusions
- Adjustable sensitivity per sensor
- Software based zoning
- Extreme weather resiliency
- Very low False Alarm Rate (FAR)
- Pinpoint troubleshooting
- Easy-to-install and integrate
- Robust and reliable
- Adaptable to most types of fences

Markets

- Critical Infrastructure Protection (CIP)
- Military sites
- Law enforcement sites
- Airports, seaports and mass transportation
- Border applications

Description

Barricade II is a fence mounted vibration detection system capable of defining the exact location of an intrusion to within 2 - 3 meters (6.5 - 10 ft.).

Like the first generation of the Barricade, a proven and widely installed system, Barricade II is adaptable to most metal fabric fences, such as chain link, razor wire or welded mesh.

While maintaining the legacy features of the original sensor, Barricade II features the ability to identify the exact disturbed sensor along the long chain of sensors, which are typically 2 - 3 meters (6.5 - 10 ft.) apart.

Benefits

- Precise location of the intruder; enables pointing a camera to the specific intrusion location.
- Capability to detect and locate simultaneous multiple intrusions along a single zone.
- Improved operational flexibility through software, since the user can set its operational zones as an overlay on top of the physical detection lines.
- Very low false alarm rate; since each sensor is analyzed separately, alarms are triggered only when a specific sensor is continuously being disturbed.
- Increased immunity to rain and harsh weather conditions is achieved through improved algorithms which capture detailed statistics from many sensors.
- Uniform sensitivity is achieved through software compensation per each sensor.
- Zone sensitivity can be easily adjusted for flexible modes of operation.
- Improved maintainability is achieved through the inherent fault isolation to the level of the individual sensor.

How it works

The basic sensing device is a discrete mechanical sensor, sensitive to physical movement / vibrations. The cable, along with the sensors, is fastened to the fence with a lead into the local VPRU II (Vibration Processing Reporting Unit).

A typical segment would be up-to 150 meters (500 ft.) and consists of a single cable, carrying sensors 2 - 3 meters apart (6.5 to 10 ft.). The integrated cable-sensor line is fastened to the fence about 150 cm (5 ft.) above the ground. Up to 4 segments are cascaded and routed to a local processor, which communicates with the command and control center. Any intrusion attempt (cutting or climbing), would send electronic signals to the local control.

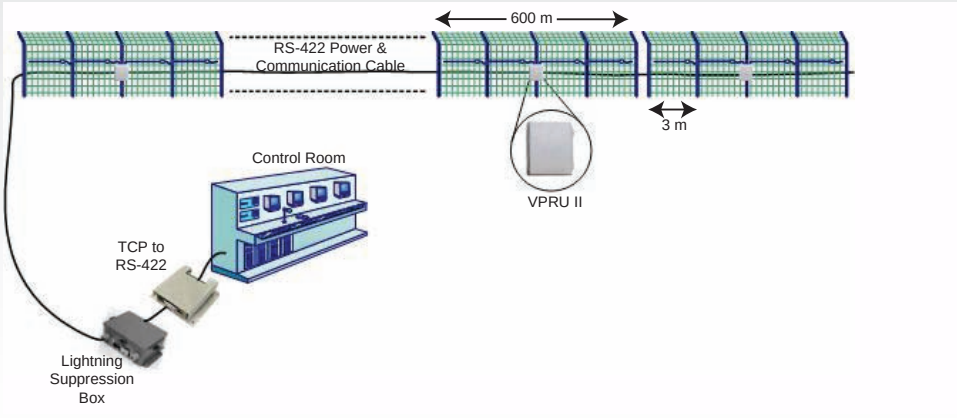
Fence vibrations are analyzed by the VPRU II in parallel by two distinct algorithms. The first layer of detection monitors the entire segment (150 meters - 500 ft.) as a single entity, while the second layer identifies the specific vibrated sensor and pinpoints the detection to within 3 meters (10 ft.). The combined signal is communicated to the control room via a serial communication line to generate an alarm.

Technical Specifications

BARRICADE II

Typical configuration

The Barricade II system configuration may vary to conform to security requirements, type of fence or terrain.



The distance between sensors is defined by the fence structure, normally 2 - 3 meters (6.5 to 10 ft.), or the distance between two supporting posts. This distance sets the resolution of the fine detection algorithm to be 2 - 3 meters (6.5 to 10 ft.).

Physical zone is a maximum of 50 sensors, leading to a zone length of:

- 150 meters (500 ft.) for 3 m (10 ft.) panels
- 125 meters (417 ft.) for 2.5 m (8.2 ft.) panels
- 100 meters (333 ft.) for 2 m (6.5 ft.) panels

Peripherals

The VPRU II is the outdoor transponder for Barricade II, and can serve up to four vibration sensor zones, each of up to 50 sensors. Each VPRU II enclosure is protected by a tamper switch.

TECHNICAL SPECIFICATIONS

VIBRATION SENSOR

- Inertial band-pass-filter
- Operating temperatures: -40º C to +70º C (-40º F to + 158º F)
- Completely weather proof
- Size: 50 dia. x 80 L mm (2 dia. x 3.1 L in.)

VPRU II - OUTDOOR TRANSPONDER

A 4 zone controller with dry contact output relays or RS-422 communication

Inputs:
- 4 Barricade vibration sensor zones
- 1 tamper cover switch
- 1 auxiliary input (supervised by EOL resistor)

Outputs:
- 1 Normally Open (NO) alarm relay
- 1 Normally Closed (NC) fail relay
- Optional - relay board with 21 dry contacts (20 for zoning, 1 for 'OK' report)
- All contacts are 500 mA 50 V

Data communication:
- RS-422

Input voltage:
- 12 - 30 VDC

Current requirement:
- Communication only - 21 mA
- Two relays - 40 mA
- Dry contact board - 500 mA max

Transient suppression:
- All inputs and outputs are lightning protected

Temperature:
- -40º C to +70º C (-40º F to + 158º F)

Humidity:
- 95% non-condensing

Enclosure:
- Weatherproof per NEMA 12 / 13, IP66

Unit size:
- 240 x 180 x 100 mm (9.4 x 7.1 x 3.9 in.)

Specifications are subject to change without prior notice.

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