

VCS-600 Fence Vibration Detection System

A new-generation fence-following detection system for cutting, climbing and lifting attempts — stable detection even with multiple simultaneous intruders and heavy environmental noise.



VCS-600 weatherproof processor on the fence line

How It Works

A sensing cable is tied along the fence fabric. The VCS-600 processor monitors microscopic bending of the cable at high sampling speed, capturing the characteristic signature of cut, climb and lift attempts anywhere along up to 600 m of fence.

Unlike single-zone sensors that aggregate all events across a run, VCS-600 divides the perimeter into independent software-defined segments and analyses each on its own signal signature — maximizing probability of detection while suppressing false alarms from wind and rain elsewhere on the line. Fence type, sensor gain, filters and vibration-count parameters are configurable in software, with sensitivity adjustment per segment.

Power and data travel through the sensing cable itself, minimizing site infrastructure. Redundant communications keep the perimeter protected even if the cable is severed, and alarms queue locally during network outages so no event is lost.

Key Features

- 600 m of fence per processor
- Independent software-defined segments; multiple simultaneous intruders
- PDet $\geq$ 95% at $\geq$ 95% confidence (compliant fence)
- Per-meter sensitivity and software-defined zones
- Power + data over the sensing cable
- Redundant comms: protection survives cable cut
- Cable open / short / ground-fault monitoring + tamper
- 4 programmable Form-C relays, 2 aux inputs
- Optional Ethernet with PoE; Windows config software
- Alarm queuing during network outage

Typical Applications

- Airports and military bases
- Oil and gas pipelines and chemical storage
- Nuclear facilities and power plants
- Factories, warehouses and substations
- Solar farms and utility-scale sites
- Custody facilities and heritage sites

Technical Specifications — Processor

Coverage	Up to 600 m of fence per processor; software-defined detection segments
Detection performance	PDet ≥ 95%, confidence ≥ 95% (cut / climb / lift on compliant fence)
Supply voltage	12–48 VDC; max power consumption 2.5 W
Relay outputs	4 × Form C, 1.0 A @ 30 VDC; software-assignable functions (alarm, supervision, tamper, power fault, fail-safe); adjustable output time
Auxiliary inputs	2 self-test inputs (usable as 2 auxiliary inputs)
Supervision	Cable open / short / ground fault; enclosure tamper; key processor parameters monitored
Options	Ethernet card with PoE; Windows-based configuration software
Enclosure	All-weather coated aluminum, IP66; 316 × 190 × 90 mm; 1.2 kg; 5 sealed PG glands
Environment	-40 °C to +70 °C; up to 100% RH non-condensing; transient protection on all I/O and power

Technical Specifications — Sensing Cable

Jacket / diameter	High-density polyethylene; outer diameter 7 mm
Section length	150 m standard sections or custom lengths
Reel / weight	Reel 48 × 48 × 23 cm; 9.0 kg per reel
Environment	-40 °C to +70 °C; up to 100% RH non-condensing; UV-stabilized cable ties; waterproof terminators and connector kits

Compliance

CE — EMC Directive 2014/30/EU (EN 61326-1:2013)	FCC Part 15 Subpart B (ANSI C63.4:2014)	Covers VGS / VCS / VFS model family
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Third-party tested by accredited laboratory. Declarations of Conformity and full test reports available on request.