

MAX1000 Tension Fence Detection System

A physical barrier and intrusion detector in one: tensioned wire lines with redundant mechanical sensor posts. Very high probability of detection with an extremely low nuisance alarm rate — and no climate calibration, ever.



Wall-top installation with sensor post and processor housing



Reference installation at a power generation facility

How It Works

Each detection zone consists of horizontally tensioned wire lines (spacing typically 9–20 cm, zone length typically up to 60 m) strung between anchor posts and supported by spiral posts that maintain wire spacing. Sensor posts between the anchors carry mechanical transducers, and each transducer monitors the two adjacent wire lines.

Pulling, cutting or spreading the wires unbalances the array and raises an alarm; the closely spaced lines make it impossible to pass undetected. Sensors are grouped into up to 6 alarm groups per post column (bottom / middle / top), enabling location reporting and discrimination of climb attempts from other disturbances. Small-animal disturbances are filtered out.

The mechanical sensors self-compensate for soil movement and temperature change and are unaffected by EMI/RFI — including transmitter sites and power plants. Systems mount on wall tops, free-standing lines, or 45° outriggers over existing fences, and perform without maintenance in desert, tropical, storm-exposed and sub-zero climates.

Key Features

- Fixed sensitivity — no seasonal recalibration
- Alarm trigger at 15–30 kg applied force or above
- ≤ 1 nuisance alarm per km per 3 months
- Immune to wind, rain, ice, snow, dust, UV, EMI/RFI
- Redundant array — no single point of failure
- 6 alarm groups for climb vs. cut discrimination
- Wall-top, free-standing or 45° outrigger mounting

Typical Applications

- Nuclear facilities and critical infrastructure (CIP)
- Airports and military/energy sites
- Prisons and custody facilities
- Power plants and substations
- Data centers and logistics parks
- Cultural heritage sites

Technical Specifications

Sensitivity	Fixed, unaffected by climatic conditions
Trigger force	15–30 kg applied force or above
Nuisance alarm rate	≤ 1 event per kilometer per 3 months

Wire spacing / zone length	Typically 9–20 cm; zone length typically up to 60 m
Alarm groups	Up to 6 groups per post column (bottom / middle / top)
Intrusion output	Dry contact, normally open, 0.1 A @ 24 V
Tamper output	Dry contact, normally closed, 0.1 A @ 50 V
Operating temperature	-40 °C to +70 °C
Humidity	Up to 95% RH, non-condensing
Environmental immunity	Wind, rain, ice, hail, snow, dust, UV; suitable for desert, storm-exposed, tropical and sub-zero sites; maintenance-free
Ingress protection	IP68 housing (tested per IEC 60529 / GB/T 4208)
Models	MAX1000-001 / MAX1000-002

Compliance

CE — EMC Directive 2014/30/EU (EN 55032:2015, EN 55035:2017)	FCC Part 15 Subpart B (ANSI C63.4:2014)	IP68 per IEC 60529
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Third-party tested by accredited laboratory. Declarations of Conformity and full test reports available on request.

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