HIGH SECURITY WELD MESH
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TRADIA ENTERPRISES CC

FlexZone™ | Datasheet

FlexZone™

Ranging fence-mounted intrusion detection sensor

FENCE-MOUNTED SENSORS

OVERVIEW

FlexZone is a fence-mounted sensor and detects and locates any attempt to cut, climb or otherwise break through the fence. It accurately locates intrusions even when there are multiple simultaneous intrusions and in the presence of background environmental noise.

HOW IT WORKS

Using signals generated by the minute flexing of its loose tube coaxial sensor cable, FlexZone detects and locates movement of the fence. High-speed sampling ensures that the FlexZone processor captures a precise picture of the fence signal and enables advanced algorithms to discriminate between intrusion signals and environmental noise. This maximizes the probability of detection while virtually eliminating nuisance alarms caused by environmental effects such as wind or rain.

Detect intruders BEFORE they get in.

By itself, your expensive security fence is only a minor deterrent to determined intruders – they can cut-through or climb it in seconds! By the time your building's alarm system detects them, they could already be stealing or damaging your property.

FlexZone is an affordable, easy-to-install system that enhances your existing fence by turning it into a smart fence. FlexZone detects and locates any attempt to cut, climb or otherwise break through your fence. Detection at the perimeter means you can trigger your alarm system, cue up camera systems, and automatically engage deterrence devices like security lights or sirens while intruders are outside your building or protected area.

FlexZone enhances your existing security system, reduces both operational costs and nuisance alarms, and above all, provides peace of mind for those with unmanned properties.

FlexZone is reliable in harsh South African environments.

Secure your perimeter, secure your site

FLEXIBLE ZONING

Each FlexZone processor supports up to 600m of sensor cable. The sensor can be configured in software to support up to 60 distinct, individually sized detection zones. Zones enable a single sensor cable to be used across areas with different operational requirements (e.g., high-traffic areas like gates or entrances) and to provide location data for integration with video surveillance and other security devices.

FEATURES & BENEFITS

- Detects and locates intrusions over a distance of up to 600 m per processor.
- Pinpoints intrusions within 3 m
- Accurately locates intrusions even when there are multiple simultaneous intrusions and in the presence of background environmental noise
- Flexible software-based zoning (up to 60 distinct zones per processor)
- Minimal infrastructure requirements – power and data run over sensor cables
- Differentiates between point disturbances caused by real intrusions and spatially distributed disturbances such as wind and rain
- Continues protection even in the event of a cable cut
- Easy to install and maintain
- Wireless Gate Sensor option

SIMPLE INSTALLATION

The sensor cable is attached directly to the fence fabric with UV-resistant nylon cable ties. The processor unit is outdoor rated and can be mounted on a fence post or other surface.

REDUCED INFRASTRUCTURE COSTS

The sensor cable can carry both power and data, which greatly reduces power distribution and data communication cable requirements. For larger sites, multiple processors can be linked together and share common power sources and network connections.

FENCE TYPES

FlexZone works with:

- Diamond mesh,
- Security welded mesh,
- Expanded metal mesh fences,
- Concertina and/or Razor wire,
- Vinyl-coated chain-link

Where the sensor cable may be subject to damage, armoured sensor cable is available. FlexZone may also be used on other types of fences, with a trial installation being done on a representative section to verify performance.

GATE OPTIONS

FlexZone cable can be installed on swinging gates to provide detection, and the gate area itself can be configured as an independent detection zone. Gate contacts can be connected to the processor's auxiliary inputs for integrated site monitoring.

Sliding and swinging gates can also be protected with the FlexZone Wireless Gate Sensor. This is an accelerometer-based device that detects attempts to open, cut, climb, or break through the gate.
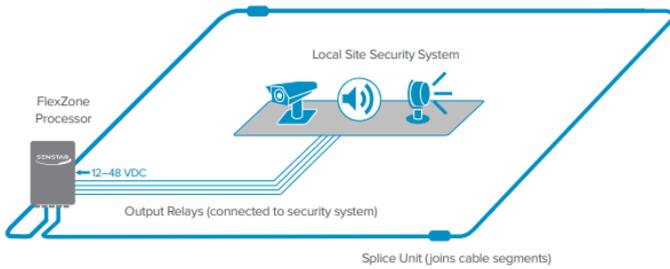
The compact, all-weather sensor module is attached directly onto the gate fabric and transmits alarm data to a nearby FlexZone processor over an encrypted link.
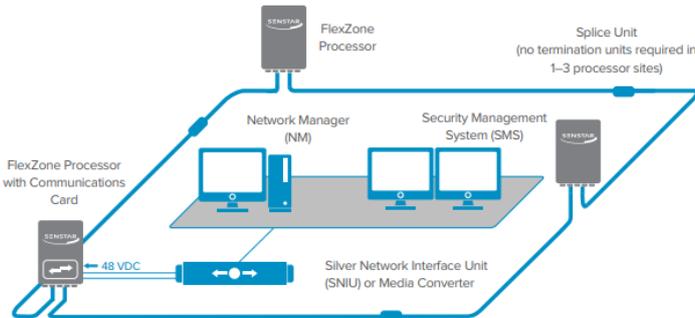
NETWORKING

Various options are available:

Alarms can be reported locally at the processor via output relays or communicated to a central location over a network. FlexZone uses the sensor cable itself for conveying alarm, status, and configuration information. The sensor network can be polled from both ends of the perimeter, thus providing redundant data paths.
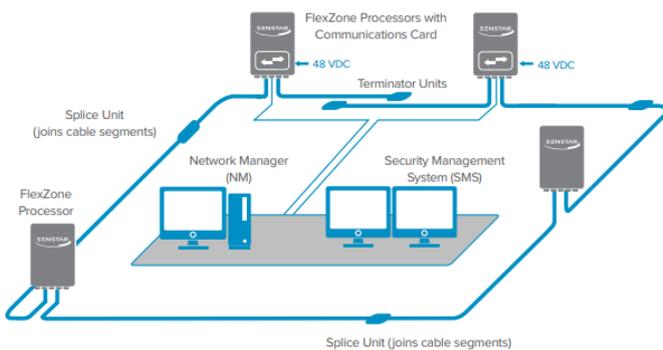
Stand Alone Site

Networked Site (1-3 processors)

Networked Site (4+ processors)

Technical specifications

PROCESSOR SPECIFICATIONS

Main features

- Detect and locate intrusions on up to 600 m (1,968 ft) of active sensor cable per processor
- Pinpoint intrusions within ±3 m (±10 ft)
- Environmentally Derived Adaptive Processing Technology (EDAPT) lowers Nuisance Alarm Rate (NAR) by mitigating the effects of wind and rain
- The Probability of detection (Pd) of an intruder cutting the fence, lifting the fence fabric, or climbing unaided over the fence shall be a minimum of 95% with a 95% confidence factor, when the system is installed in accordance with the manufacturer's directions on a high-quality fence
- Calibration and operating parameters configured via UCM software
- Audio output of fence response
- Available in two models:
    - FlexZone-4: Supports up to 4 zones
    - FlexZone-60: Supports up to 60 zones

Environmental specifications

- Temperature: −40 to 70 °C (−40 to 158 °F)
- Humidity: 100% (condensing)
- Rugged all-weather polyester powder painted aluminum UL, NEMA Type 4X (IP66) enclosure with hinged, locking cover

Electrical specifications

- Input power: 10 to 60 VDC
- Consumption: 2.0W (base processor), 2.5W with communications card
- Power over sensor cables: 48V, 50W power supply required
- Power supply sharing: Up to 5 processors per power supply (power is shared over sensor cables to the two adjacent processors on each side)
- Auxiliary power output: 2.0W, 34 to 60 VDC
- Lightning protection: Transient voltage protection on all inputs and outputs, including power

Physical specifications

- Dimensions (L/W/D): 31.6 x 19.0 x 9.0 cm (12.5 x 7.5 x 3.5 in), including cable glands and mounting brackets
- Weight: 1.2 kg (2.6 lbs)
- 5 cable entry points with compression glands (includes filler plugs)
- External ground lug

Supervision/self-test features

- Monitoring of the sensor cable to detect opens, shorts and grounding
- Enclosure tamper switch
- Monitoring of critical processor parameters

On-board storage

- Sensor data backup to onboard SD card
- Alarm queuing in the event of a network interruption

RELAY OUTPUTS AND AUXILIARY INPUTS

- 4 Form C output relays, 1.0A at 30VDC
- Relays can be controlled locally or over the network
- Function of each relay can be assigned based on requirements
- Assignable functions under local control include: alarm, supervision, door tamper, power fail and fail-safe
- Activation time programmable from 0.125 to 10 seconds
- In network mode, relays programmable for activation type and timing
- Two self-test inputs, one per cable side, become auxiliary dry contact inputs when processor is operating in network mode
- Auxiliary inputs are programmable for supervision type, resistor value(s) and filtering
- Add-on relay output and dry-contact input cards provide an additional 4 outputs or inputs (one per processor)

OPTIONAL NETWORK CARDS

- EIA-422 network card with A and B side Tx/Rx connections for Silver networks
- Multi-mode fiber optic network card with ST connectors (820 nm) to support A and B side Tx/Rx connections for Silver network. Allows distances of up to 2.2 km (7,200 ft)
- Single-mode fiber optic network card with ST connectors (9/125 single-mode fiber, 1310 nm) with A and B side Tx/Rx connections for Silver network. Allows distances of up to 10 km (32,000 ft)
- 10/100BASE-TX Ethernet card with PoE option (provides power and communications to sensor processors over one cable)

GATE OPTIONS

- FlexZone Wireless Gate Sensor
- Quick disconnect connector kit

USER-PROGRAMMABLE PARAMETERS

- Fence type, gain, filter, and disturbance count parameters
- Stand-alone or network configuration
- Relay function assignment and operating mode
- Auxiliary input supervision parameters

UNIVERSAL CONFIGURATION MODULE (UCM) SOFTWARE

- Windows®-based, point-and-click interface
- Communicates with FlexZone processor via local USB connection or over network
- Precise sensitivity leveling (per meter)
- View real-time sensor data and save for later analysis

SENSOR CABLE OPTIONS

Standard FlexZone sensor cable rolls

- High density polyethylene jacket
- Cable length: 150 m (492 ft)
- Cable outside diameter: 7 mm (0.27 in)
- Roll dimensions (H/W/D): 48 x 48 x 23 cm (19 x 19 x 9 in)
- Roll weight: 9.0 kg (20 lbs)

Armored FlexZone sensor cable rolls

- Sensor cable inside flexible aluminum conduit
- Cable length: 150 m (492 ft)
- Cable outside diameter: 14 mm (0.56 in)
- Roll dimensions (L/W/D): 46 x 46 x 28 cm (18 x 18 x 11 in)
- Roll weight: 22.7 kg (50 lbs)

Environmental specifications (standard and armored)

- Temperature: −40 to 70 °C (−40 to 158 °F)
- Humidity: 100% (condensing)

CABLE ACCESSORIES

- UV-resistant cable ties
- Stainless steel cables ties with installation tool
- Waterproof cable terminators and splice kits
- Condulet – splice protection for armored cable

REGULATORY COMPLIANCE

- CE (including RoHS 2)
- FCC
- REACH