



## Barrier sensor: Taut wire

Highly rugged. Extremely reliable.

**DESCRIPTION** – Senstar’s taut wire perimeter intrusion detection system is designed to detect and also physically prevent intrusions by unauthorized personnel into high security sites. Its key advantage is that it has no environmental limitations and has a very high Probability of detection (Pd) and a virtual absence of false and nuisance alarms.

**APPLICATION** – The system is installed on either the posts of an existing fence or on posts specifically installed for that purpose. Anchor posts must be rigid enough and sufficiently supported to withstand the lateral force of the tensioned wires. It is also possible to protect buildings or walled areas by mounting it on outrigger-type posts.

### Features

- High Probability of detection (Pd)
- Very low False Alarm Rate (FAR)
- Physical intrusion barrier
- No field adjustments required
- No height or length limitations

### Benefits

- Combines high-performance sensor with formidable physical barrier
- Low maintenance costs
- Unaffected by Electromagnetic Interference / Radio Frequency Interference (EMI / RFI)
- Operates in wide variety of environments including desert conditions, severe storms, humid climates and snow covered areas
- Correctly installed, the system has less than one false alarm per kilometer per three months
- Constant sensitivity
- Simple integration with control unit - power and data on one cable

### Markets

- Airports / ports / borders
- Energy & utilities - refineries / nuclear / chemical plants
- Military installations
- Correctional facilities
- Industrial sites

### How it works

The heart of this system is an electro-mechanical sensor which, upon sensing a predetermined amount of wire deflection, sends a signal to a Sensor Post Reporting Unit (SPRU). The SPRU in turn communicates the alarm information over an RS-422 serial connection. The Security Management System (SMS) accepts the serial data, sounds an alarm and provides a clear indication of the type and location of the intrusion attempt on the display screen.

### Performance

Some alarm systems have an unacceptable number of false and nuisance alarms. As a result, an alarm can be disregarded by guard personnel with serious results. The system is free of this problem. Correctly installed, the system has less than one false alarm per kilometer per three months. The Probability of detection (Pd) approaches 100%. Cutting or spreading fence wires, climbing over them on a ladder or through them, cutting the communication cable or trying to tamper with the sensor will cause an immediate alarm. Forces less than about 15 kg (33 lbs.) will not activate the sensor, and therefore, small animals such as rabbits, dogs, snakes, birds etc., will not cause false alarms.

# Technical Specifications

## Taut wire technology

Senstar's patented electro-mechanical sensor ignores any slow wire movements due to soil movement or temperature changes but will respond to a sudden movement of the wire such as when a wire is cut or pulled due to an intrusion attempt. Its sensitivity to wire movements characteristic of intrusion attempts is factory-set and remains constant over the life of the system.

Sensors are mounted on sensor posts located halfway between adjacent anchor posts. An array of tensioned barbed (or barb less) wires are run between the anchor posts. Each wire is clamped to a sensor at the sensor post location - each of two adjacent wires are connected to one sensor. A pre-defined deflection of the wire causes an alarm. The wires are spaced sufficiently close together to make it impossible for an intruder to penetrate the array without causing an alarm. For alarm reporting purposes the sensors in each sensor post are divided into a maximum of six (6) separate alarm groups.

The monitoring of the sensors and alarm reporting is accomplished through the state-of-the-art SPRU installed on each sensor post and linked to an SMS by means of the communication cable. Each sensor post is protected against sensor tampering by means of a tamper proof cover which generates an alarm when the cover is removed. The tamper alarm is reported via the communications cable and can be monitored by an SMS. Three versions of the SPRU device are available:

- input only for collecting alarm inputs from the taut-wire sensors
- with inputs and TTL outputs
- with inputs and reed-relay outputs

## Optional add-on systems

Through integration with an overall SMS, additional alarm devices, such as floodlights, sirens, CCTV cameras, etc. may be activated in response to an intrusion attempt – either manually or automatically in response to a sensor alarm. Alarm device activation can be done by using the integrated output capability of the SPRU device or by a separate output device.

Augmenting with a CCTV system controlled by an integrated SMS, a guard can visually confirm an intrusion attempt by viewing the intruder on a monitor, without having to watch that monitor at all times.

## Universality

The system is unaffected by EMI / RFI, or by climatic conditions. It is protected against lightning and can be supplied for any site length, terrain, reasonable system height or configuration.

## SYSTEM COMPONENTS

### FIELD MOUNTED EQUIPMENT

- Sensor posts
- Anchor posts
- Carrying post attachment devices
- Sliding devices and intermediate spirals
- Communications cable for connection to SPRUs
- Sensor activating wire (barbed or un-barbed)
- Tensioning and clamping accessories

### TYPICAL CONFIGURATION

A typical installation consists of a 2 m (6.6 ft.) vertical component along with a 1 m (3.3 ft.) inclined outrigger with 20 taut wires on the vertical component and 10 taut wires on the inclined outrigger

**SENSITIVITY:** Fixed and independent of climatic conditions

**DEFLECTION FORCE:** 15 kg (33 lbs.) of force or more will activate an alarm

**FALSE ALARM RATE (FAR):** Less than one per 1 kilometer per three months

**TEMPERATURE RANGE:** -40° C to +72° C (-40° F to +160° F)

**RELATIVE HUMIDITY:** Up to 95% non condensing

**RAIN, HAIL, SNOW, DUST, UV RADIATION:** Unaffected. Trouble and maintenance-free in desert conditions, severe storms, tropical climates and sub-zero snow covered areas

**CORROSIVE ATMOSPHERE:** Suitable for almost all environments, special stainless steel version available for exceptional conditions

**LIGHTNING & ELECTRONIC TRANSIENTS:** Complies with MIL-STD-9094A

**EMI / RFI:** Complies with MIL-STD-461/462

**SENSOR MTBF:** 25 million hours

**MTTR:** 30 minutes

*Specifications are subject to change without prior notice.*



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