

# Intelli-FLEX

## Microphonic Cable Intrusion Detection Sensor



Intelli-FLEX™ is a unique microphonic intrusion detection system for outdoor, fence-mounted perimeter security applications. Utilizing signals generated by the minute flexing of a proprietary triboelectric coaxial sensor cable, specific characteristic intrusion signatures are analyzed by a powerful digital Signal Processor. Intelli-FLEX will detect an intruder cutting through, climbing on or lifting the fence fabric.

Installation is quick and simple. Inexpensive UV-resistant tie wraps secure the sensor cable to the fence at 30 cm (1.0 ft.) intervals. The Intelli-FLEX Signal Processor can monitor two independent zones, each with a maximum of 305 m (1000 ft.) of sensor cable.

A programmable microprocessor enables the user to set the operating parameters for each zone using a simple plug-in Configuration Module. Separate parameters are set for cut and climb detection, resulting in independent alarm processing to optimize detection and minimize false alarms. Since the coaxial sensor cable is microphonic, an optional plug-in audio module enables the user to “listen-in” to the fence activity. This feature provides an additional low-cost tool for assessing the nature of an intrusion attempt.

Intelli-FLEX’s unique signal processing incorporates a set of non-volatile programs called Adaptive Algorithms. This adjustable firmware allows features such as Ambient Compensation and Common Mode Rejection to interpret the nature of the disturbance, virtually eliminating alarms caused by natural or environmental events. An optional weather sensor is available to provide each Signal Processor with independent verification of the current weather conditions affecting its performance. Intelli-FLEX will adapt to these conditions without sacrificing detection sensitivity.

The Intelli-FLEX Signal Processor is available with either an output relay interface or a built-in multiplex circuit interface to a variety of alarm monitoring systems. With the Intelli-FLEX Central Controller, Senstar® 100, or StarNeT™ 1000, it is possible to process all alarms on a color graphic display and to adjust all parameters for each zone remotely from the comfort of the central station.

Fence-mounted cable

Low cost

Quick and Easy to Install

Digital Signal Processing

High Probability of Detection

Independent Detection of Fence Cutting and Climbing

Adaptive Algorithms virtually eliminate environmental nuisance alarms

Audio “Listen-In” Capability

Available in Standalone and Network Versions

Color graphic display for the network version

Remote adjustment of all parameters in each zone

Optional armoured sensor cable

# Intelli-FLEX Microphonic Cable Intrusion Detection Sensor

## INTELLI-FLEX SYSTEM CONFIGURATION

Each Intelli-FLEX zone (two per Signal Processor) consists of up to 305 m (1000 ft.) of the Senstar-Stellar proprietary microphonic sensor cable. This length of cable will protect approximately 290 m (950 ft.) of a 2.5 m (8 ft.) high metal fabric fence. For fences up to 3.7 m (12 ft.), a double pass of the cable at equal vertical distances is required. Contact Senstar-Stellar for details regarding higher fences. In most cases, facility perimeters are configured in shorter zones to match CCTV assessment capabilities and to allow rapid response to the area of attempted intrusion.

Several options are available to protect both swinging and sliding gates. These include using the same proprietary Intelli-FLEX cable on the gates with properly placed non-sensitive cable, with or without local or remote gate bypass.

A terminator at the end of the cable permits the Signal Processor to supervise the integrity of each zone. An optional remote test terminator can be used to verify the performance of the entire Intelli-FLEX cable sensor and processor.

A simple cable splice is used to join the sensor cable to standard coaxial cable which is used as non-sensitive lead-in cable from the fence to the processor. Depending on the coaxial cable selected, the lead-in can have a maximum length of 186 m (610 ft.). A splice kit is also used to repair or replace any segment of sensor cable that becomes damaged. No electrical or sophisticated tools are required.

Standalone Intelli-FLEX processors with relay contact closures for alarm outputs are used for short perimeters. For longer perimeters, multiple zones of the Intelli-

FLEX sensor can be monitored and controlled over a twisted copper pair or fiber optic network using the network Intelli-FLEX processors.

## INTELLI-FLEX INSTALLATION

Installation of an Intelli-FLEX system is quick and easy. The proprietary sensor cable can be directly attached to the fence fabric using UV-resistant tie wraps (supplied), or may be installed in conduit. An armoured version of the cable is also available. There is no need to weave the cable in and out of the fence fabric. The cable is terminated at the far end. The sensor cable is joined to standard coaxial cable for connection to the processor. Careful sensor cable handling ensures that uniform cable sensitivity is maintained.

The processor is enclosed in an IP66/NEMA 4 enclosure on the safe side of the fence. 12 to 15 VDC local power or 18 to 56 VDC networked power is required for each processor. Alarm information is communicated by either relay contact closures or on a data network.

## INTELLI-FLEX SETUP

All processing parameters can be adjusted locally using a simple hand-held plug-in Configuration Module. Once calibration is complete for each processor, the Module can be removed and used elsewhere. For networks, the Intelli-FLEX Central Controller can also adjust various parameters for all zones individually from the keyboard and color display. This will result in considerable savings in field time and effort, as well as in the wiring costs of monitoring alarm relay outputs.

The following parameters are adjustable for each zone:

*Cut:* threshold, minimum count, and time window

*Climb:* threshold, minimum duration, and time window

## NETWORK FEATURES

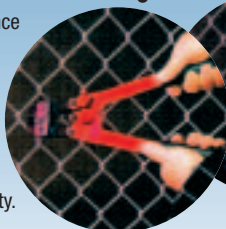
Intelli-FLEX has network Signal Processors that interface with both twisted copper pairs and fiber optic networks. These processors are equipped with two additional inputs for alarm reporting from auxiliary sensors, and two additional relay outputs for remote device control. Central alarm control and display is performed by either the Intelli-FLEX Central Controller, the Senstar 100, or the StarNeT 1000. These control systems utilize copper or fiber optic data and feature a graphic map display and remote adjustment of all operating parameters in each zone.



## Detects

The innovative fence sensor which rejects alarms from: wind, rain, snow, storms, fog, animals, lightning, debris, and seismic activity.

### Cutting



### Climbing



### Lifting



## Applications



Airports



Communications Sites



Correctional Institutions



Government Agencies and Laboratories



Military Bases



Equipment Storage Yards



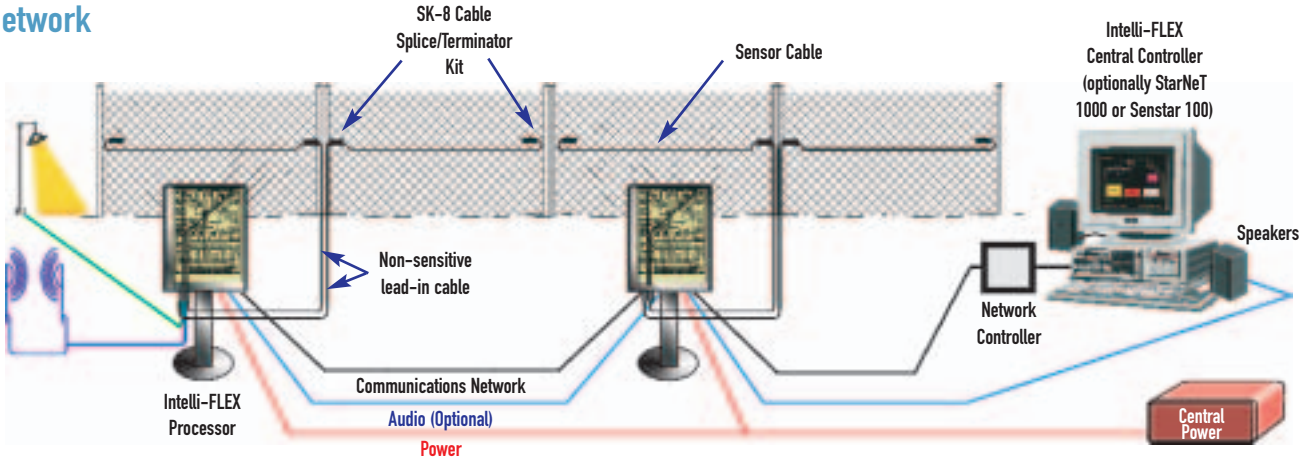
Utilities



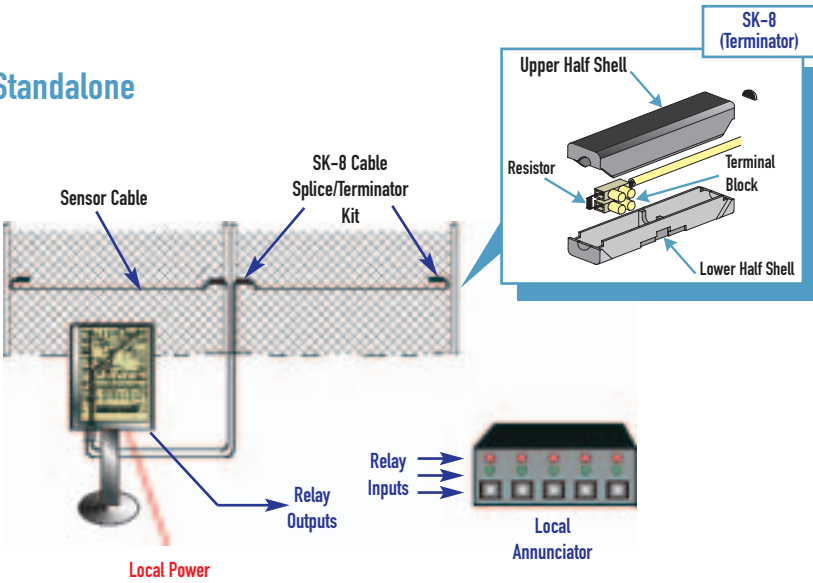
Oil and Gas

## Configurations

### Network



### Standalone



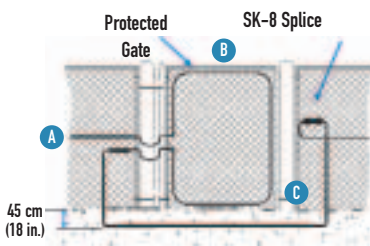
### Intelli-FLEX Single Zone Standalone Kit



- ✓ Intelli-FLEX Processor & Enclosure
- ✓ Sensor cable
- ✓ Feed-in cable
- ✓ SK-8 Splice & Terminator Kit
- ✓ AC adapter, float charger
- ✓ Backup battery
- ✓ Tie-wraps
- ✓ Intelli-FLEX product guide

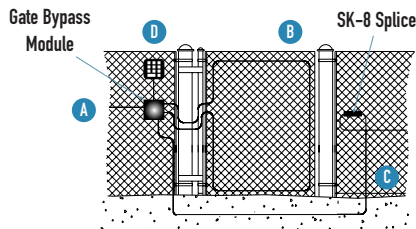
### Gates

#### Single Panel Swinging Gate



- Ⓐ From prior section of zone
- Ⓑ Sensor cable on gate section
- Ⓒ Bypass cable

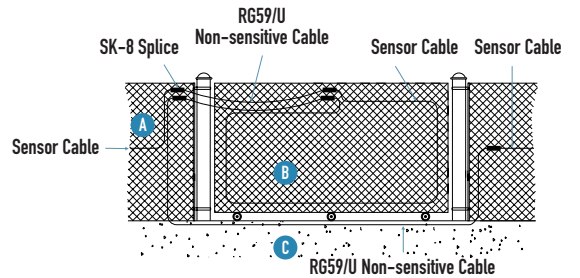
#### Single Panel Swinging Gate (Bypass)



- Ⓐ From prior section of zone
- Ⓑ Sensor cable on gate section
- Ⓒ Bypass cable from bypass module to sensor cable beyond gate
- Ⓓ Keypad or card reader by others optional

### EconoSlide

#### Single Sliding Gate Configuration



- Ⓐ From prior section of zone
- Ⓑ Sensor cable on gate section
- Ⓒ Bypass cable

## SPECIFICATIONS

### Dual Zone Standalone Processor

Digital Signal Processor on a mounting plate in a steel IP66/NEMA 4 enclosure  
12 to 15 VDC local input power, 18 to 56 VDC networked input power  
Programmable operating parameters using a hand-held configuration module  
Self-test inputs

#### Alarm and Supervision Relay Outputs

Form C, 0.5 Amp at 30VDC, solid-state relays.  
One alarm relay and one supervision relay supplied for each zone  
Alarm relay activation time adjustable from 0.5 to 5.0 seconds, factory default 2.0 seconds.

### Dual Zone Network Processor

(For copper data network)

Digital Signal Processor on a mounting plate in a steel IP66/NEMA 4 enclosure  
Twisted pair network interface with support for all Senstar-Stellar protocols  
12 to 15 VDC local input power, 18 to 56 VDC networked input power  
Two auxiliary device inputs and two auxiliary relay outputs for remote device control  
Alarm output information (including auxiliaries) via data network to central control  
Programmable operating parameters using a hand-held configuration module or by remote network control on the twisted pair network using the Intelli-FLEX Central Controller, Senstar 100, or StarNeT 1000

### Dual Zone Network Processor

(For fiber optic data network)

Digital Signal Processor on a mounting plate in a steel IP66/NEMA 4 enclosure  
Fiber optic network interface with support for all Senstar-Stellar protocols  
12 to 15 VDC local input power, 18 to 56 VDC networked input power  
Two auxiliary device inputs and two auxiliary relay outputs for remote device control  
Alarm output information (including auxiliaries) via data network to central control  
Programmable operating parameters using a hand-held configuration module or by remote network control on the fiber optic network using the Intelli-FLEX Central Controller, Senstar 100, or StarNeT 1000

### Standard Processor Features

#### Lightning Arrestor Package

Transorbs and gas discharge devices on all relay outputs, copper communication lines and power supply input

#### Supervision

Monitoring of the sensor cable to detect opens, shorts and grounding

#### Door Tamper - integral "Hall Effect"

magnetic field sensor

#### Environment

##### Operating temperature

-40°C to +70°C (-40°F to +158°F) ambient  
Relative Humidity to 95% non-condensing

#### Standard Enclosure

Weatherproof Steel IP66/NEMA 4 -  
28 H x 23 W x 12.7 cm D  
(11 H x 9 W x 5 in. D)  
Weight: 5.0 kg (11 lbs.)

Option: Stainless steel enclosure

#### Backward Compatibility

Fully compatible with existing E-Flex II installations

Requires only a processor replacement for improved performance

Can upgrade existing installations to a network configuration

#### Accessories

Model LAM-900 Audio Module for "Listen-In" option; attaches to any Intelli-FLEX processor

Model 2499 Weather Station

Model 2495 Configuration Module (see below)

#### Configuration Module

Hand-held molded ABS plastic  
Interconnecting Cable with 8-pin Modular Snap-In Connectors

Input - Membrane tactile switches in graphics panel

Indicators/Display - Two-character LED alphanumeric display and point LED's

Operating Temperature -30°C (-22°F) to +40°C (+104°F)

#### User-Programmable Parameters

Cut - threshold, minimum count, and time window

Climb - threshold, minimum duration, and time window

#### Cipher-Protected Programmable Parameters

Common Mode Rejection -

Enable/Disable

Ambient Compensation - Value,

Enable/Disable

Peak Trigger Values

Cut Profile Values

Alarm Output Relay Activation Time

### Triboelectric Sensor Cable

UV-resistant proprietary coaxial cable in 305 m (1000 ft.) rolls

Model 2387 - Sensor Cable in Armour-FLEX™ vandal-resistant flex conduit in 100 m (330 ft.) rolls

#### Cable Accessories

Model 2366 UV-resistant cable tie wraps  
Model SK-8 waterproof cable splice/terminator kit

Model EST-8GB Remote self test terminator kit

Model 2388-R1 7.5 m (25 ft.) of non-sensitive lead-in cable with 90° connector

Model 2490-1 Gate Bypass Module, locally activated by keyswitch

Model 2490-2 Gate Bypass Module, remote activation

Model EJ-8 Gate sensor cable quick disconnect connector kit

### Intelli-FLEX Central Controller

Commercial PC Computer chassis with a Color Monitor, Keyboard and Mouse  
Sennet® Network Controller to control the RS-485 network

Interfaces - one parallel port for printer output, one serial port to Network Controller, one serial port for mouse  
Maximum Number of Sensor Zones - 64 (32 Intelli-FLEX Processors)

Display of all sensor alarm conditions  
Standard graphical display, optional Custom Map display

Simple menu-driven alarm response functions

Set operating parameters remotely for each processor

Optional pass-through alarm relay inputs/outputs

Easily expanded to a Senstar 100 system

#### Senstar 100

See product data sheet for the Senstar 100

#### StarNeT 1000

See product data sheet for the StarNeT 1000

\* Specifications subject to change without prior notice.



ISO 9001:2000  
CGSB Registered  
Certificate 95711

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