

MPS-4100

Microwave protection system

DESCRIPTION – The MPS-4100 provides reliable detection when used by itself or in conjunction with other sensor technologies. It can be used in a variety of applications, where either complete perimeter protection or a gap fill solution is required.

APPLICATION – This bi-static microwave sensor consists of a transmitter and a receiver located up to 183 m (600 ft.) apart. They are installed facing each other to form a cylindrical zone of detection within which intruders will be reliably detected night or day and regardless of weather conditions.



Features

- High Probability of detection (Pd)
- Low Nuisance Alarm Rate (NAR)
- Variable separation of 5 to 183 m (16 to 600 ft.)
- Horizontal or vertical polarization
- Self-supervising transmitter option
- Built-in lightning protection on input / output lines
- Phase Locked Loop (PLL) signal processing
- Simple mechanical alignment
- 6 field-selectable modulation frequencies
- Rugged all metal enclosure & weather shield
- Wide-range Automatic Gain Control (AGC) circuit
- Built-in Light Emitting Diode (LED) bar graph alignment aid
- Rear access to electronics
- Audio jack for troubleshooting nuisance alarms
- Plug-in modular replacement of all parts – does not change alignment

Benefits

- Post mounting means easy installation
- Easily adjusted using built-in alignment aid
- Reliable detection system where fence or buried solutions not possible
- Tough metal enclosure resists breakage
- Polarization options allow stacking to increase height of detection zone
- Conformally coated Printed Circuit Boards (PCBs) provide long-term reliability in all outdoor environments
- Easy troubleshooting with built-in phone jack

Markets

- Prisons / correctional facilities
- Military installations
- Critical commercial / industrial assets
- Utilities
- Petrochemical industry
- Airports

Technical Specifications

How it works

The transmitter creates an invisible pattern of microwave energy between the transmitter and the receiver.

The transmitter's Dielectric Resonant Oscillator (DRO) frequency source increases stability over wide temperature ranges. The 10 GHz signal is amplitude-modulated at one of six field-selectable frequencies to allow multiple units to operate in close proximity to each other.

The receiver has signal processing with wide dynamic range and minimum susceptibility to interference. Changes in signal amplitude are analyzed at the receiver and directly related to the intruder's size and speed. The receiver uses a preamplifier to ensure there is an adequate signal to the processor in situations like sally ports which require transmission through fences where signal loss can be significant.

The MPS-4100 pattern width increases with range. Pattern height varies in conjunction with pattern width. The polarization plane of the antenna can be selected to enhance signal isolation when units are operated in close proximity, for instance when two units are stacked to increase the height of the detection zone.

Enclosure

The powder-coated aluminum enclosure is designed with the rain shield and enclosure as one piece, without seams. This design improves water flow paths, eliminates ice formation in critical areas, protects the radome, and provides a high degree of immunity from potentially harmful radio-frequency interference.

Monitoring

The detected alarm signals are sent by the receiver to the alarm monitoring and control point. Alarm monitoring is conducted through relay outputs or an optional compatible multiplex communications interface to Senstar's Crossfire™ network. All options provide separate annunciation of alarm and tamper conditions. During installation, the transmitter tamper switch can be configured to turn off the transmitter output, providing an immediate notification of trouble to the receiver and thus making the transmitter self-supervising.

SPECIFICATIONS

PERFORMANCE: Greater than 99% Probability of detection (Pd) when properly installed.

CRAWL DETECTION: 5 cm (2 in.) per second

POLARIZATION: Horizontal or vertical, field-selectable

FREQUENCY: 10.525 GHz or 10.587 GHz

MODULATION FREQUENCY: 6 field-selectable

APPROXIMATE 3dB BEAM WIDTH: Horizontal: 13°, vertical: 11°

FCC CERTIFICATION: FCC: FL9MPS4100

OPERATING TEMPERATURE: -40°C to +70°C (-40°F to +158°F)

ALARM OUTPUT:

- Isolated and supervised relay contacts, jumper programmable
- NO / NC contacts with 0.25 A rating @ 30 VDC
- Optional copper multiplex interfaces to Crossfire, Silver and MX networks

ALARM DURATION: Adjustable from 0.5 sec to 2.5 sec

TAMPER ALARM ACTUATION: Activated by enclosure switch continuous alarm until corrected

TAMPER OUTPUT: NO / NC switch contacts with 0.25 A rating @ 30 VDC

AUDIO ASSESSMENT:

- Audio information is provided with built-in phone jack
- 100 mV RMS typical, 600 Ohm

REMOTE TESTING: Built-in self-test generator simulates actual intrusion signals

CONNECTIONS:

- Removable plug-in terminal blocks cable connecting point
- 1.9 cm (0.75 in.) dia. flexible weatherproof conduit fitting for power and alarm cables

WEATHERPROOFING:

- Aluminum enclosure - powder coated
- All openings gasketed and sealed
- Conformal coated circuit boards

LIGHTNING PROTECTION:

Input / output lines protected by gas discharge arrestors and transorbs (90 V, 5000 A)

POWER REQUIREMENT:

- 12 to 24 VDC
- Optional uninterruptible power supply

SUPPLY CURRENT REQUIREMENT:

- Transmitter, 25 mA
- Receiver, 50 mA
- Optional copper communications card, 70 mA

SIZE: 20 cm (8 in.) diameter x 23 cm (9 in.) deep

TOTAL SHIPPING WEIGHT: 7.6 kg (16.8 lbs.) per Tx/Rx pair with mounting brackets

SEPARATION: 5 m (16 ft.) to 183 m (600 ft.)

MOUNTING: 7.7 cm (3 in.) to 10.2 cm (4 in.) pole required, mounting brackets supplied

Specifications are subject to change without prior notice.



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