SENSTAR

MPS-24000

K-Band microwave intrusion detection sensor

DESCRIPTION – The MPS-24000 microwave sensor is a volumetric perimeter intrusion detection system. Designed for high performance, cost effective operation and ease of installation, the MPS-24000 microwave sensors provide an extremely high Probability of detection (Pd) with a low Nuisance Alarm Rate (NAR) in most scenarios.

APPLICATION – The microwave system consists of a transmitter, receiver and mounting hardware. The transmitter and receiver are pole or wall-mounted and installed facing each other to form a cylindrical zone of detection. Microwave sensor can be used to provide intruder detection around a complete perimeter or as a gap-fill solution where another system acts as the main perimeter sensor.

Features

- Field selectable antenna patterns
- Low current operation
- Six operating channels
- Remote self-test
- Audio output for set-up and maintenance

Markets

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

Benefits

- Cost-effective
- High Probability of detection (Pd)
- Low Nuisance Alarm Rate (NAR)
- Easy-to-install
- Field adjustable
- Tamper-proof
- Conformally coated Printed Circuit Boards (PCBs) provide long-term reliability in all outdoor environments

MICROWAVES

Technical Specifications

How it works

The MPS-24000 microwave sensors use the most advanced microwave radar technology with field-configurable planar array antenna elements for short wide angle detection (ideal for gate protection), mid range, or long range full perimeter volumetric detection applications.

The advanced electronic processing design features six field-selectable operating channels with extremely high adjacent channel rejection to allow multiple radar operation in a highly congested Radio Frequency Interference (RFI) environment. The Phase Locked Loop (PLL) signal processing allows for intruder detection on a reduction or increase in signal from the transmitter, as well as by the sensing of Doppler shifted signals due to intruder motion. The complete loss of the transmitted signal and jamming attempts are also detected. These features, combined with low current operation from any 12 VDC source make the MPS-24000 microwave sensor a truly exceptional performer.

Antenna pattern

The detection field is adjustable in the field by changing the configuration of the transmitting (Tx) and receiving (Rx) antennas. As shipped from the factory, the Tx and Rx antenna beam width is 11°. This default configuration can be changed by installing RF absorbent pads over specified elements of the phased array planar antenna. In this way beam widths of 16° and 24° can be set.

Options

The Model 24001 is the version for standard commercial use.

The Model 24004 version of the sensor system is subjected to a completely documented and traceable acceptance test program. The systems are fully tested at high and low temperature extremes and are operationally "burned in" at a high temperature to ensure field reliability.

EQUIPMENT SUPPLIED: 1 transmitter unit, 1 receiver unit, 2 mounting hardware sets, 1 installation & operation manual

RANGE: 3 to 150 m (10 to 492 ft.)

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

DETECTION METHOD:
- Loss or increase of transmitter signal
- Detection of Doppler-shifted signal from intruder motion
- Frequency jamming

FREQUENCY: 24.125 ± .050 GHz K-Band (std)

OPERATING CHANNELS: 6 field-selectable

OPERATING POWER REQUIREMENTS: 11 VDC to 15 VDC, 150 mA total system

OPERATING TEMPERATURE: -40°C to +66°C (-40°F to +150°F)

CONNECTIONS AVAILABLE:
Transmitter: power; self-test; tamper; ground
Receiver: power; alarm; tamper; audio side tone; reset; ground

DIMENSIONS: 31cm x 16cm x 8 cm
(12.25 in.H x 6.25 in. W x 3.375 in. D)

WEIGHT: Transmitter and receiver each weigh 0.9 kg (2 lbs.)

COLOUR: Beige

MECHANICAL:
- High impact plastic housing
- Designed for all weather outdoor or indoor environments
- Both universal wall swivel & 9 cm (3.5 in.) OD post mounting hardware included
- Unit may be replaced without requiring system realignment
- Internal RFI shielding

TRANSMITTER:
FCC Certification: FCC identifier FL924000
Operating channels: 6 field-selectable channels
Tamper output: Both NC and NO (1 A, 28 VDC maximum)
Self-test: Accepts either 5 to 15 VDC or grounding logic control input
LED indicator: "Power On"
Adjustments: channel select switch, self-test signal amplitude

RECEIVER:
Microwave bandpass: Greater than 60 dB adjacent sub-carrier rejection
Operating channels: 6 field-selectable channels
Tamper output: Both NC and NO (1 A, 28 VDC maximum)
Alarm relay output: Sealed DPDT (2 each NC and NO contacts: 2 A, 28 VDC maximum)
Audio side-tone output: Balanced 600 Ohms proportional to target velocity and size for local or remote monitoring
Remote alarm reset circuit: Accepts 5 to 15 VDC or grounding logic control input
LED indicators: "Power On;" "Wrong Channel;" "Alarm"
Adjustments: Channel select switch, Doppler sensitivity, alarm duration, latched / timed alarm relay, range select
Alignment: Test point for optimizing system signal with voltmeter
Audio output for evaluation of intruder detection performance
Options: 115 VAC uninterruptible power supply (with battery)

Specifications are subject to change without prior notice.

Senstar is represented by dealers in over 80 countries.

International
Carp, Ontario, Canada
Tel: +1 (613) 839-5572
info@senstar.com

United Kingdom
Worcestershire, UK
Tel: + 44 (0) 1386 834433
senstaruk@senstar.com

Europe
Markdorf, Germany
Tel: + 49 7544-95910
info@senstar.de

United States
Fremont, CA, USA
Toll Free: +1 (800) 676-3300
mkt@msi-usa.net

Latin America
Cuernavaca, México
Tel: + 52 (777) 313 0288
info@senstarstellar.com.mx

Brazil
São Paulo, Brasil
Tel: +55 (11) 4195-1020
info@senstarstellar.com.br

www.senstar.com
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