

# INTREPID™ Model 334-POE

IP-BASED POWER-OVER-ETHERNET DIGITAL MICROWAVE LINK



INTREPID™ Model 334-POE is a high-security volumetric perimeter detection sensor for fencelines, open areas, walls, gates, entryways, and rooftop security applications. Combining field-proven detection performance with advanced Digital Signal Processing algorithms to discriminate between intrusion attempts and environmental disturbances, Model 334-POE mitigates risk of site compromise while preventing nuisance alarms.

This IP-based solution integrates with new or existing TCP/IP networks via a single Ethernet cable, providing installation and maintenance convenience, system design flexibility and lower infrastructure costs. Model 334-POE Transmitters and Receivers feature an embedded browser-based Installation Service Tool (IST) for local or remote setup on an authorized PC or mobile device.

A true parabolic dish and antenna assure long range operation, superior beam control and predictable Fresnel zones. Advanced receiver design increases detection probability by alarming on partial or complete beam interruption or signal jamming. Six crystal-controlled, field selectable modulation channels with digital filtering allow multiple sensors to operate together without interference.

Designed for maximum protection against sabotage, Model 334-POE is equipped with heavy-duty components and packaging plus integrated radome tamper switches to impede physical abuse. Superior EMI/RFI shielding protects sensor electronics against external electromagnetic or radio frequency interference. Units can be dual, triple or quad-stacked with Model 336-POE K-Band Digital Microwave Links to fortify ultra-high security applications with risk of prone crawling or bridging attack. Hi-Rel options are also available.

## KEY FEATURES

- RANGE: UP TO 183 M (600 FT)
- ADVANCED DIGITAL SIGNAL PROCESSING FOR HIGH PD / LOW NAR
- UNIQUE PARABOLIC DISH & ANTENNA DESIGN FOR PRECISE BEAM CONTROL
- FRESNEL SUPPRESSION ALGORITHMS REDUCE OUTER FIELD DISTURBANCES
- SUPERIOR EMI / RFI SHIELDING AND SURGE PROTECTION
- INTEGRATION WITH IP / POE-BASED SECURITY DEVICES AND CAMERAS
- ECONOMICAL PLUG-AND-DEPLOY INSTALLATION
- USER-FRIENDLY CONFIGURATION VIA PC OR MOBILE DEVICE
- ALARM MONITORING VIA SERVER-BASED CONTROLLER OR THIRD PARTY HLI

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## PRINCIPLES OF OPERATION AND DETECTION

Model 334-POE Transmitter radiates amplitude-modulated X-band energy that travels to the Model 334-POE Receiver. Changes in signal amplitude at the receiver are directly related to the object's size and density, allowing the sensor to discriminate between objects. Model 334-POE will alarm on intruders walking, running, crawling on hands and knees or prone crawling through the pattern. Local or remote adjustments can provide alarm on smaller, faster or slower targets, depending on the specific application. Alarms are reported to the network controller to a third-party interface through a Software Development Kit.

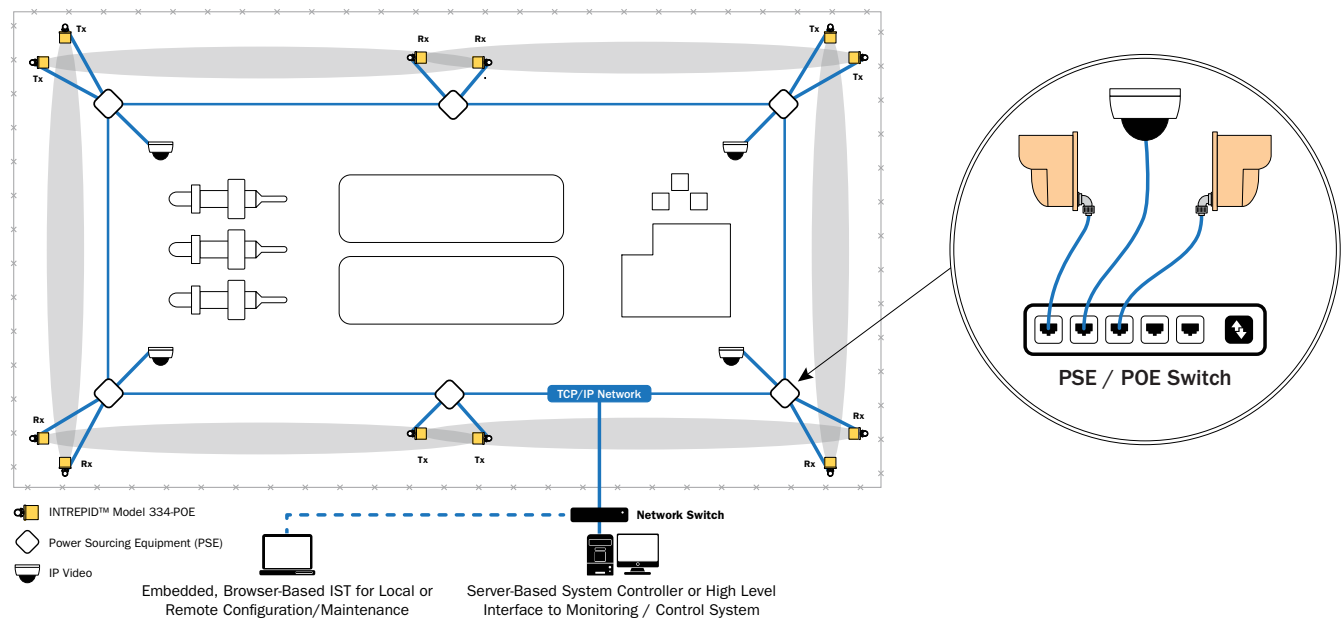
INTREPID™ Model 334-POE employs proprietary Digital Signal Processing algorithms to classify disturbances to the detection field in real time to optimize detection performance. Intruders walking, jumping or crawling through the field are identified and detected, while common environmental disturbances are suppressed, preventing nuisance alarms.

The fully-shielded electronics module and precisely-focused parabolic antenna of Model 334-POE are mounted on a rugged metal base-plate and covered by a molded ABS radome for all weather operation. Heavy-duty metal pole-mounting bracket with steel swivel mount permits precise setup and provides firm lock against movement.

For detailed information on application, installation and adjustment, consult Model 334-POE Technical Manual.

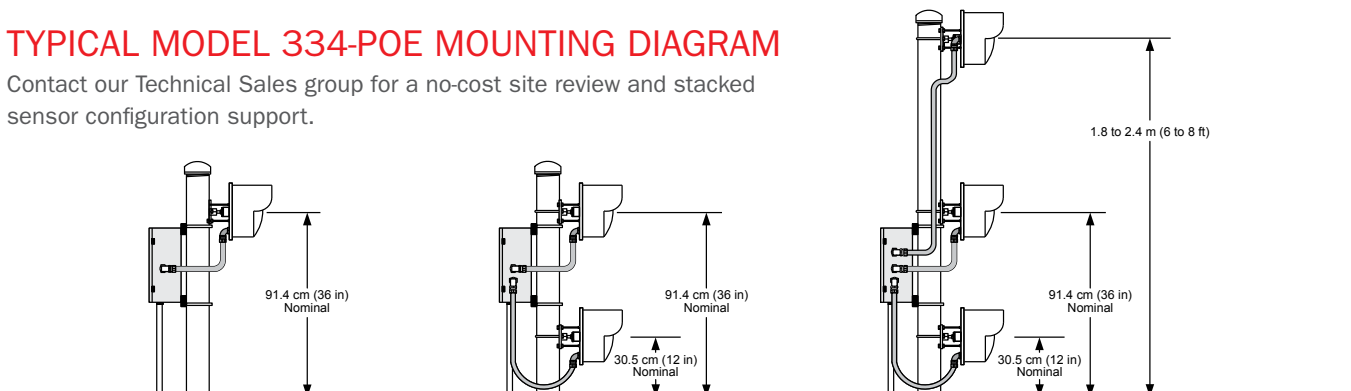
## TYPICAL MODEL 334-POE CONFIGURATION DIAGRAM

Model 334-POE seamlessly integrates with the TCP/IP network via a single cable for power and data transmission.



## TYPICAL MODEL 334-POE MOUNTING DIAGRAM

Contact our Technical Sales group for a no-cost site review and stacked sensor configuration support.



# INSTALLATION SERVICE TOOL (IST)

Each INTREPID™ Model 334-POE Transmitter and Receiver features embedded, browser-based Installation Service Tool (IST) software for convenient local or remote graphical device configuration, monitoring of sensor status, control parameters and signal strength. Unique configuration security provides notification upon changes to device settings, ensuring that only approved changes are implemented.



*Easy configuration and maintenance via PC or handheld device.*

## PERFORMANCE FEATURES AND BENEFITS

- **RUGGED CONSTRUCTION**  
Heavy-duty industrial components and packaging, including rugged metal base-plate / conduit fitting and molded ABS radome, are highly resistant to mechanical abuse. Conformal-coated circuit board enables reliable operation in high humidity, corrosive atmospheres or harsh climatic extremes.
- **PARABOLIC DISH AND ANTENNA DESIGN**  
Assures long range operation, superior beam control and predictable Fresnel zones for high probability of detection (PD) and low nuisance alarm rates (NAR).
- **RF PATH ALARM**  
Provides an alert when the RF pattern is compromised or distorted by foreign objects moved into the detection field.
- **RF SHIELDING AND SURGE PROTECTION**  
Sensor circuit board is shielded against extreme sources of EMI and RFI and protected against lightning induced surges.
- **DIGITAL SIGNAL PROCESSING (DSP)**  
Proprietary embedded DSP algorithms recognize the unique profiles of intruders walking, running or jumping through the detection field and offer enhanced crawl and vehicle detection.
- **FRESNEL SUPPRESSION ALGORITHMS**  
Unique field-selectable digital signal processing algorithms limit outer field (Fresnel zones) disturbance detection, enhancing operation in challenging applications and reducing nuisance alarms.
- **IP/POE-BASED SOLUTION**  
Using a single cable for data and power transmission, each Model 334-POE-S sensor operates as a secure element that seamlessly integrates with other perimeter intrusion detection devices - such as IP cameras and access control systems - for greater system design flexibility, reduced installation costs, networked power and the convenience of remote monitoring or servicing.
- **OPTIONAL HI-REL VERSION**  
For maximum security sites, Hi-Rel units are fitted with an RFI/EMI shielded radome, undergo an extended burn-in cycle at 52° C (125° F) and are temperature tested from -40° to 66° C (-40° to 150° F). A position-locking, non-corrosive, anodized aluminum and stainless steel mounting bracket reinforce against movement.

# INTREPID™ Model 334-POE SPECIFICATIONS

**Equipment Supplied:** Model 334-POE Transmitter and Model 334-POE Receiver, each with embedded Installation Service Tool (IST), Universal Swivel Ball Mounting Brackets (2).

**Frequency:** X Band. 10.525 GHz (USA) conforms to F.C.C. Part 15.

**Output Power:** 10 mW peak, 5 mW average, square wave modulated.

**Range:** 3 to 183 m (10 to 600 ft).

**Target Size:** 35 kg (77 lbs) human walking, running, hands and knees crawling or jumping. Prone crawling or rolling 35 kg (77 lbs) human, or simulated with a 30.5 cm diameter metal sphere detected at maximum range of 122 m (400 ft) with flat terrain.

**Target Velocity:** 30 mm/sec to 15 m/sec (0.1 ft/sec to 50 ft/sec).

**Probability of Detection:** 0.99 minimum.

**Automatic Range Adjustment:** Link automatically adjusts to slow changes in path loss due to rain, snow, etc. AGC range -54 dB.

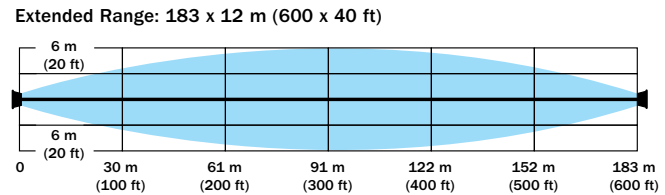
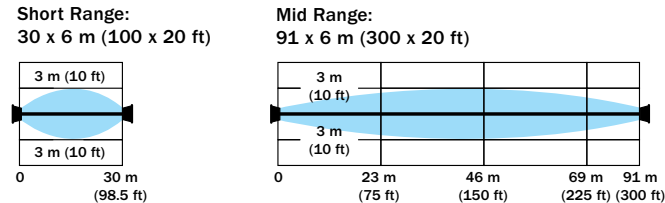
**Modulation Channels:** 6, field selectable.

**Polarization:** Vertical (E) or Horizontal (H).

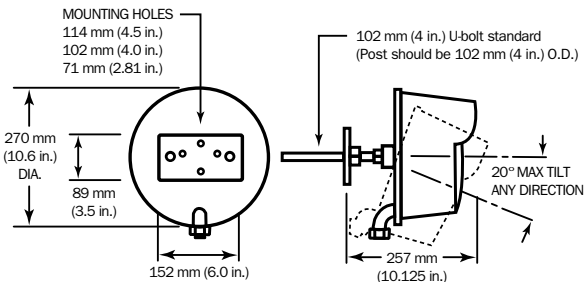
**Pattern:**

Model 334-POE provides three detection patterns and ranges to 183 m (600 ft). The pattern width may be varied in the field by simply installing the proper antenna pattern element and adjusting receiver sensitivity. Protection pattern width may be varied from 0.3 m (1 ft) to 15.2 m (50 ft) wide. Pattern height varies in conjunction with pattern width. Typical Horizontal Pattern (width):

**Typical Horizontal Pattern (width):**



**Dimensions:**



**Antenna Beam Width:** Approximately 11 degrees in the horizontal and vertical planes.

**Path Alarm:** Generated if RF power at Receiver is changed.

**False Alarm Rate:** 1/unit/year based on signal to noise ratio.

**Operating Environment:** -40° C to +66° C (-40° F to +150° F) 0-100% Relative Humidity.

**POE:** Power over Ethernet, IEEE 802.3af, Class 1

**Power Requirements:** Tx: 2.2W Typ. / Rx: 0.5 W Typ.

**Ethernet (Tx/Rx):** RJ-45 connector, 10/100 Base-T

**Configuration:** Embedded browser-based Installation Service Tool (IST) in Tx/Rx.

**Supported Browsers:** Internet Explorer 11, Edge 40, Firefox 54, Chrome 59 or higher.

**M2M Communications:**

- Protocol: IPP over TCP 2 connections
- SDK available

**Alarms (Transmitter):**

- Tamper Alarm: Alarm on enclosure tampering
- Service Alarm: Alarm during unit configuration
- Configuration Change Alarm: Alarm if configuration settings have been modified

**Alarms (Receiver):**

- Target Alarm: Alarm on target motion
- Path Alarm: Alarm on path obstruction
- Tamper Alarm: Alarm on enclosure tampering
- Service Alarm: Alarm during unit configuration
- Configuration Change Alarm: Alarm if configuration settings have been modified

**Self Supervision:** Alarm on failure and remote test.

**Mounting:** Locking ball swivel mount. 20° adjustment in any direction.

**Remote Test:** Activate test function through software to generate alarm at Receiver.

**Weight / Shipping Weight:** 2.04 kg (4.5 lb) per unit / 8.2 kg (18 lb) total.

**POE System Controllers:** A range of POE system controllers plus available SDK offer scalable IP-based security management solutions for any site parameters. Consult **POE System Controllers** data sheet for details.

**Options:**

- 02A15483-A01:** Radome Latch Kit (replaces screws).
- MB65:** Heavy-duty Lockable Mounting Bracket.

**Ordering Info:**

- Model 334-POE
- Model 334-33467-POE (High-Rel Version)

**FC** INTREPID™ is a trademark of Southwest Microwave, Inc. Specifications subject to change without notice.



**USA (CORPORATE HEADQUARTERS):** Southwest Microwave, Inc., Arizona, USA | Telephone +1 (480) 783-0201

**EUROPEAN OFFICES:** Southwest Microwave Ltd., Worcestershire, UK | Telephone +44 1386 75 15 11