

INTREPID™ Model 390

ADVANCED DIGITAL K-BAND MICROWAVE TRANSCEIVER



INTREPID™ Model 390 K-Band Advanced Digital Microwave Transceiver provides reliable three-dimensional protection in outdoor environments. Advanced Digital Signal Processing (DSP) algorithms successfully discriminate between intrusion attempts and environmental disturbances, mitigating risk of site compromise while preventing nuisance alarms.

A patented Range Cutoff (RCO) circuit rejects all microwave targets beyond a preselected range. This unique capability makes Model 390 immune to alarms from objects outside the RCO distance, including large targets such as metal fences, vehicles, trees, trains or aircraft. Model 390 is also equipped with a patented Zero-Range Suppression (ZRS) circuit which reduces the amplitude of close-range targets, preventing nuisance alarms caused by rain, vibration, birds and windblown objects.

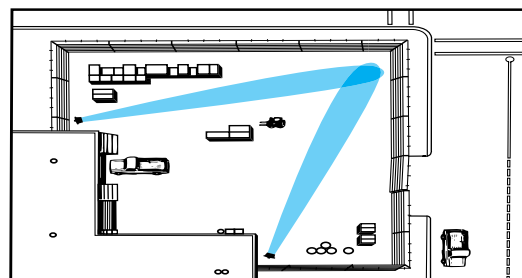
Model 390 can seamlessly integrate with TCP/IP networks via a single Ethernet connection for power and communications or be wired for relay output and power. The transceiver features a secure embedded browser-based Installation Service Tool (IST) for convenient local or remote setup and control of sensor parameters from an authorized PC or mobile device.

Operating at K-band frequency, Model 390 is inherently less susceptible to outside interference from airport landing systems, aircraft or marine radar, and other microwave intrusion systems. The transceiver is outfitted with heavy-duty components and integrated EMI/RFI shielding for maximum protection against physical tampering and harsh environmental conditions.

Model 390 is designed for use with Southwest Microwave T/R Links to establish three-dimensional detection patterns of up to 457 m (1,500 ft). A built-in Multiplex System allows up to eight Model 390 devices to operate together without mutual interference.

KEY FEATURES

- 15 TO 61 M (50 TO 200 FT) DETECTION RANGE
- ADVANCED DIGITAL SIGNAL PROCESSING FOR HIGH PD / LOW NAR
- ETHERNET-BASED SETUP AND ALARM REPORTING
- RESISTANT TO RADAR INTERFERENCE
- RANGE CUTOFF CIRCUIT PREVENTS ALARMS CAUSED BY MOVING OBJECTS BEYOND A PRESELECTED RANGE
- ZERO-RANGE SUPPRESSION CIRCUIT REDUCES EFFECTS OF HARMLESS CLOSE-RANGE DISTURBANCES
- ALARMS WHEN SPOOFING ATTEMPTS ARE DETECTED
- SUPPORTS INTEGRATION WITH IP / POE-ENABLED SECURITY DEVICES AND CAMERAS
- ALARM MONITORING VIA FORM C RELAYS, INTREPID™ POE CONTROLLER OR THIRD-PARTY HLI



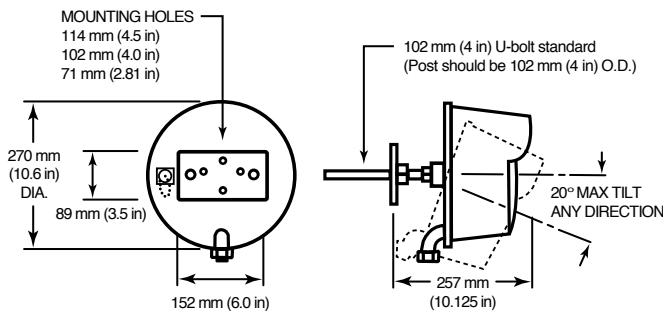
INTREPID™ Model 390 SPECIFICATIONS

OPERATION

Model 390 transmitter radiates a controlled pattern of microwave energy into the protected area. An alarm is generated when motion by a target is analyzed by the Digital Signal Processor as a valid intrusion. An alarm is also generated when zone reflection changes are beyond adjustable limits, alerting operators to a spoofing attempt caused by a large object blocking portions of the detection field. Equipped with a Zero-Range Suppression circuit, Model 390 is highly insensitive to rain, snow, vibration and small windblown objects.

The unique Range Cutoff circuit limits detection exceeding a field-selected distance of 15 to 61 m (50 to 200 ft). The RCO distance remains fixed and will not impact the sensor's sensitivity within the desired area of detection.

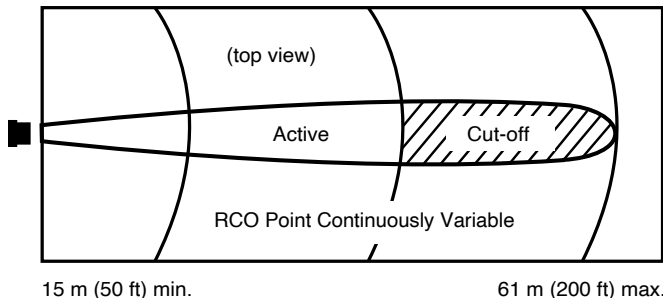
DIMENSIONS



PATTERN

Model 390 provides a detection pattern with a maximum range of 61 m (200 ft) and a maximum width of 9.2 m (30 ft). Adjustment of the sensitivity control can reduce the pattern to approximately 15 m (50 ft) in length by .9 m (3 ft) in width. Horizontal and vertical antenna beamwidth is approximately 8 degrees. These distances are for a mounting height of .75 m (2.5 ft); other mounting heights will reduce the maximum range. Detection pattern and RCO distances are shown below.

Typical Horizontal Pattern



SPECIFICATIONS

Equipment Supplied: Model 390 K-Band Outdoor Microwave Transceiver, embedded Installation Service Tool (IST) and Universal Swivel Ball Mounting Bracket.

Detection Range: 15 to 61 m (50 to 200 ft). Varies based on site reflectivity.

Frequency: 24.125 GHz (USA) conforms to F.C.C. Part 15.

Detection Width: 0.3 to 9.2 m (1 to 30 ft). Varies based on range and site reflectivity.

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 30.5 cm metal sphere may be detected at maximum range of 45.7m (150 ft) with flat terrain.

Target Velocity: 0.06 m/sec to 8.0 m/sec (0.2 ft/sec to 26 ft/sec).

Probability of Detection: 0.99 minimum.

Self-Supervision: 1) Antenna blockage causes constant alarm. 2) Remote test checks entire transceiver circuit. 3) Slave unit alarms upon loss of sync.

Range Cutoff: Targets will not be detected beyond a field-selected range of 15 to 61 m (50 to 200 ft).

Zero-Range Suppression: Target signal at zero-range suppressed by 20dB minimum.

Output Power: 32 milliwatts peak at 24.125 GHz.

Modulation: 3.12% duty cycle pulsed at 32 KHz +/- 10%.

Sync: Internal. Up to 8 Model 390 transceivers, time multiplexed.

Input Power: POE: IEEE 802.3af, Class 1, 10.5 to 60 VDC: 12 VDC at 164mA, 24 VDC at 85mA, 48 VDC at 48mA. Minimum Startup Current: 400mA.

Ethernet: RJ-45 connector, 10/100 Base-T.

Security Protocol: TLS 1.2, supports X.509v3 Public Key Infrastructure Certificates.

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

Alarm Monitoring: Form C relays, INTREPID™ POE system controller or third party HLI.

Alarm Relay Contacts: SPDT-Form C, 2 amps at 28 VDC.

Tamper Switches: 2 ea. SPDT-Form C, 2 amps at 28 VDC. 1 switch reports in hardware and 1 switch reports in software.

LED Indicators: Power On, Target Alarm, Master Sync Mode, Receive Detect, PLL Lock, Communications.

Remote Test: Activate test terminal on board or test function in software.

Operating Environment: - 35°C to + 66°C (- 30°F to + 150°F) 0 to 100% relative humidity.

Weight / Shipping Weight: 2.04 kg (4.5 lbs) per unit / 4.5 kg (10 lbs) total.

Performance Monitoring: External MS connector enables quick-connect to RM83 Performance Monitor and Test Set. Installation Service Tool enables local or remote performance monitoring.

Options:

- RM83: Performance Monitor and Test Set
- 02A45483-A01: Radome Latch Kit
- MB65: Heavy-Duty Position-Locking Mounting Bracket



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



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