

Model 380

Outdoor Microwave Transceiver

Southwest Microwave Model 380
Outdoor Microwave Transceiver Sensor
50 to 200 ft (15 to 61m) Detection Range

FEATURES:

Model 380 K-Band Outdoor Microwave Transceiver provides reliable three-dimensional protection in outdoor environments. Sensitive, field-adjustable detection circuitry is capable of detecting the human intruder while walking, running or crawling on hands and knees at a distance up to 200 feet (61m) from the transceiver.

A patented **Range Cutoff (RCO)** circuit positively rejects all microwave targets beyond a preselected range. This unique capability makes Model 380 immune to alarms from any object outside the RCO distance, even very large microwave targets such as semitrailers, trees, trains or aircraft.

Operating at K-band, which is much less crowded than X-band, Model 380 is inherently less susceptible to outside interference from airport landing systems, aircraft radar, and other microwave intrusion systems. Because its K-band microwave frequency is 2.5 times higher than the X-band, the multipath signal generated by an intruder is also 2.5 times higher and detection of slow-moving intruders is correspondingly better.

Model 380 is also equipped with a patented **Zero-Range Suppression (ZRS)** Circuit which reduces the amplitude of any microwave target which is at very close range. This circuit dramatically reduces nuisance alarms from rain, vibration, birds and windblown objects. Neither the **RCO** nor the **ZRS** circuit affects detection pattern.

A **Built-In Multiplex System** allows the Model 380 to operate in close proximity with other Southwest Microwave Transceivers and T/R Links without mutual interference. For multiplexed operation, a synchronizer wire (twisted pair) is connected to each sensor. Any sensor or external clock is connected as "master" and all other sensors are connected as "slaves." For a group of up to sixteen sensors, only one sensor will operate at a given time.

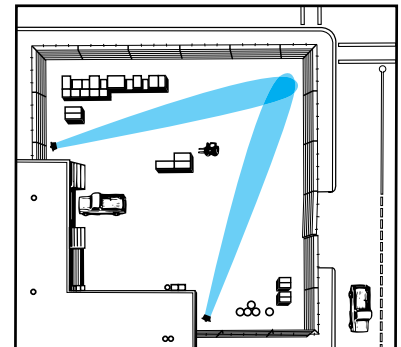
Setup and adjustment of Model 380 is easily accomplished. Aim the transceiver into the area to be protected, apply power and allow a few minutes to establish a reference level for reflected signals from the illuminated area. Select the desired **RCO** distance 50 to 200 ft. (15 to 61m) and perform a walk test to determine optimum setting for sensitivity control.

Model 380 may be mounted to any solid surface by means of a lock down swivel mounting bracket supplied with each unit. This swivel mount allows circular rotation of up to 20° in any direction. Mounting bracket will also mount to solidly based 3.5 or 4 inch (8.9 or 10.2cm) O.D. post.

Model 380 is designed for use with Southwest Microwave T/R Links which establish three-dimensional detection patterns, up to 1500 feet (450m) long, between transmitter and receiver.



- ▶ Outdoor K-Band Volumetric Detection to 200 feet (61m)
- ▶ Resistant to Aircraft Radar and Airport Radar Interference
- ▶ Continuously Variable Range Cut-Off Circuit Prevents Alarms from Moving Objects Beyond a Preselected Range
- ▶ Zero-Range Suppression Circuit Reduces Effects of Rain, Vibration, and Windblown Objects
- ▶ Built-In Multiplex System for Multiple Sensor Operation
- ▶ Plug-In Test Meter Provides Quick Set-up



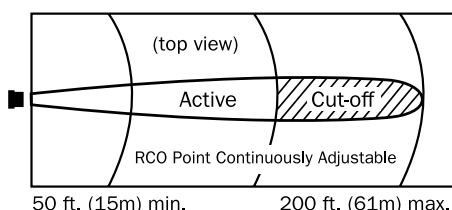
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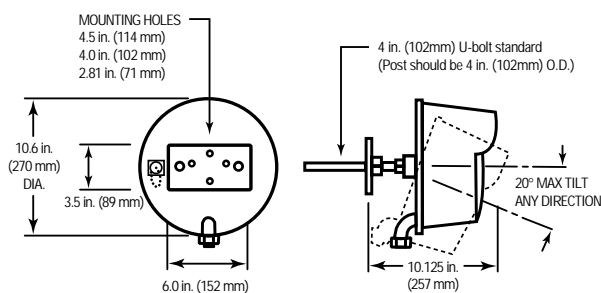
Pattern

Model 380 provides a detection pattern with a maximum range of 200 feet (61m) and a maximum width of 24 feet (7.3m). Adjustment of the sensitivity control can reduce the pattern to approximately 50 feet (15m) in length by 3 feet (.9m) in width. Horizontal and vertical antenna beamwidth is approximately 8 degrees. These distances are for a mounting height of 3-4 feet (.9-1.2m); other mounting heights will reduce the maximum range. Detection pattern and **RCO** distances are shown below.

Typical Horizontal Pattern



Dimensions



Operation

Model 380 transmitter radiates a controlled pattern of microwave energy into the protected area. Under normal conditions (no intrusion) the receiver establishes a reference level based on signals reflected from the protected area. Motion by an intruder causes the received signal to change relative to the established reference level and an alarm is generated.

The unique **Range Cut-Off** Circuit positively limits detection beyond a field-selected distance of 50 to 200 feet (15-61m). The **RCO** distance remains fixed and is not affected by the sensor's sensitivity adjustment for desired area of coverage. Model 380 will alarm on a human-sized target running, walking or crawling on hands and knees through the pattern, and is relatively insensitive to rain, snow, vibration, and small wind-blow objects. Area of coverage may be reduced in extreme environments for additional reliability.

For detailed information on application, installation, and adjustment consult the Model 380 Technical Manual. Careful installation and alignment is required for trouble-free operation.

Specifications

Equipment supplied Model 380 K-Band Outdoor Microwave Transceiver and Universal Swivel Ball Mounting Bracket.

Detection range Variable from 50 feet (15m) to 200 feet (61m). Varies somewhat with site reflectivity.

Detection width Varies with range, 3 feet (0.91m) to 20 feet (6.1m). Varies somewhat with site reflectivity.

Target size 0.8 square meter (human) walking, running or crawling on hands and knees. 0.1 square meter prone crawling human or 30cm metal sphere may be detected at shorter ranges with special site preparation.

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

Probability of detection 0.99 minimum on 0.8m square meter target, based on equipment S/N ratio.

Self-supervision

- 1) Antenna blockage causes constant alarm.
- 2) Remote test checks entire transceiver circuit.
- 3) No loss of detection upon loss of sync.

Range cutoff Targets will not be detected beyond a field-selected range (50 to 200 feet).

TX output power 32 milliwatts peak at 24.125 GHz.

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

Spurious emissions Conforms to F.C.C. Regulation Part 15 (USA). FCC Identifier CA6380

Sync selection Internal or external.

DC input 11.0 to 14.5 VDC, 160 mA nominal, 220 mA synchronized.

Alarm relay contacts SPDT-Form C, 2 amps at 28 VDC.

Tamper switch SPDT-Form C, 2 amps at 28 VDC.

LED indicators 1) Power "ON" 2) Alarm 3) SYNC lock.

Remote monitor External MS connector for connection of RM82 Performance Test Set.

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

Shipping weight 10 lbs. (4.5kg) total.

How to Order

Specify Model 380. Order optional accessories by model number and description. Specifications subject to change without notice.

