

# MODEL 380

## MICROWAVE TRANSCEIVER



### K-BAND RELIABILITY AND CONTINUOUSLY VARIABLE RANGE CUT-OFF FOR OPTIMAL DETECTION PRECISION

**Model 380** K-Band Outdoor Microwave Transceiver provides reliable three-dimensional protection in outdoor environments. Sensitive, field-adjustable detection circuitry is capable of detecting a human intruder while walking, running or crawling on hands and knees at a distance up to 61 m (200 ft) 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 frequency, which is much less crowded than X-band, Model 380 is inherently less susceptible to outside interference from airport landing systems, aircraft or marine radar, and other microwave intrusion systems. Because K-band is 2.5 times higher than X-band, the multipath signal generated by an intruder is also 2.5 times higher and detection of slow-moving intruders is correspondingly better.

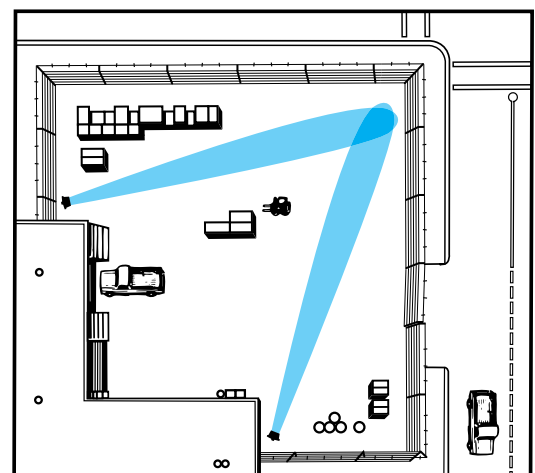
Model 380 is also equipped with a patented Zero-Range Suppression (ZRS) Circuit which reduces the amplitude of any microwave target at very close range, dramatically reducing nuisance alarms from rain, vibration, birds and windblown objects. Neither the RCO nor the ZRS circuit affects detection pattern.

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.

Model 380 is designed for use with Southwest Microwave T/R Links which establish three-dimensional detection patterns of up to 450 m (1,500 ft) between transmitter and receiver.

#### KEY FEATURES

- 15 TO 61 M (50 TO 200 FT) DETECTION RANGE
- RESISTANT TO 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



# MODEL 380 SPECIFICATIONS

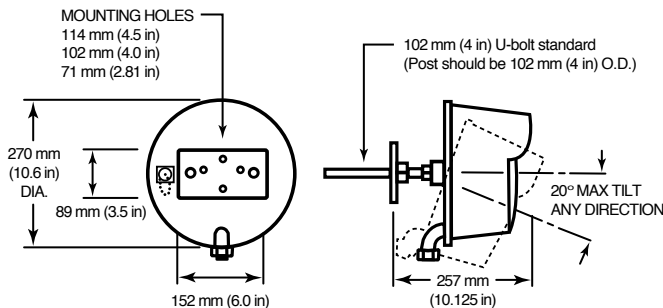
## OPERATION

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 15 to 61 m (50 to 200 ft). 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.

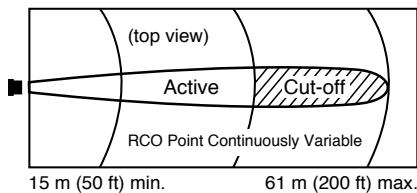
## DIMENSIONS



## PATTERN

Model 380 provides a detection pattern with a maximum range of 61 m (200 ft) and a maximum width of 7.3 m (24 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 .9 to 1.2 m (3 to 4 ft) ; other mounting heights will reduce the maximum range. Detection pattern and RCO distances are shown below.

### Typical Horizontal Pattern



## SPECIFICATIONS

**Equipment Supplied:** Model 380 K-Band Outdoor Microwave Transceiver. **Required mounting bracket (1) sold separately.**

**Detection Range:** 15 to 61 m (50 to 200 ft). Varies somewhat with site reflectivity.

**Detection Width:** Varies with range, 0.91 to 7.3 m (3 to 24 ft). Varies somewhat with 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 cm metal sphere may be detected at shorter ranges with special site preparation.

**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 on 0.8 m 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 (15 to 61 m (50 to 200 feet)).

**TX Output Power:** 32 milliwatts peak at 24.125 GHz.

**Modulation:** 3.12% duty cycle pulsed at 32 KHz +/- 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 RM83 Performance Test Set.

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

**Shipping Weight:** 4.5 kg (10 lbs) total.

### Options:

**0215483-A01:** Radome Latch Kit (replaces screws).

**MB62:** Universal Swivel Ball Mounting Bracket.

**MB65:** Heavy-duty Lockable Mounting Bracket.

### Ordering Info:

Model 380: Order 380-XXXX-X

Model 380-33453 (High-Rel Version): Order 380-33453-XXXX-X

Specifications subject to change without notice.



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