

## FEATURES

- Multi-level PIR signal processing\*
- Digital temperature compensation
- Digital Microwave signal processing
- DRO microwave technology for low current and reliable operation
- Adjustable microwave pattern to match room size
- MOV transient / static protection
- High RF immunity with SMD construction
- Exceptional white light immunity
- Microprocessor spike protection
- Optional tamper switch
- Optional Form 'C' alarm contacts

## SPECIFICATIONS

### ELECTRICAL

Voltage .....	9.5 to 14.5 Vdc
Ripple Tolerance .....	3 Vp-P at 12 Vdc
Stand-by Current .....	30 mA at 12 Vdc
Alarm Current .....	30 mA at 12 Vdc
Alarm Contacts .....	Form 'A' (standard) Form 'C' (optional)
Tamper Contact .....	Optional
Contact Ratings .....	100 mA at 24 Vdc
Spike Protection .....	Yes

### OPERATION

Coverage .....	40' x 40' (13m x 13m)
MW Range Adjust .....	10' to 40' (3m to 13m)
Alarm Duration .....	2 seconds
Walk Speed .....	0.5 ft/s to 10 ft/s (0.15m/s to 3.0m/s)
Jumper .....	Alarm LED on/off

### IMMUNITY

RFI / EMI .....	0.01 to 1200 MHz (30 V/m)
Transients .....	2.4 kV at 1.2 joules
Static at wiring terminals .....	25 kV
White Light .....	20 000 Lux at the detector
Temperature .....	32° to 122° F (0° to 50° C)
Temperature Compensation .....	Over entire operating range

## DESCRIPTION

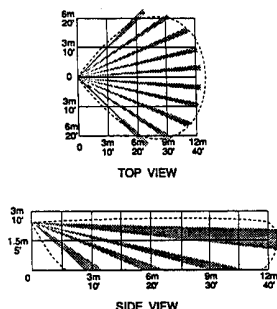
The New Force 2 series 200 is a Dual Detector which employs both Microwave (MW) and Passive Infrared (PIR) motion sensors. These sensors are combined through a microprocessor to provide "intelligent" motion detection designed to eliminate "single detector" false alarms.

Significant new technical features such as Multi-Level PIR signal processing, digitally controlled temperature compensation, a high reliability DRO microwave sensor and digital MW signal analysis combine for a new level of detection sensitivity, stability and false alarm immunity.

The PIR and MW systems are each designed as independent, high quality motion detectors. When combined, the result is a detector with unmatched performance.

The new Force 2 indicates an alarm only when both sensors detect motion within 10 seconds of each other. The first sensor, either the PIR or MW, which detects motion will start the 10 second confirmation period during which the other sensor must also detect motion. If the first sensor's detection is not confirmed, the unit disregards the first sensor alarm.

## PIR / MW BEAM PATTERNS



## LOCATING THE DETECTOR

Mount the detector in a dry indoor location which will allow the beam pattern to adequately cover the area being protected. Survey the mounting location and the area being protected for the following potential problems.

### MOUNTING HEIGHT

The FORCE 2 is designed to provide optimum coverage when mounted between 2.1m (7') to 2.4m (8') from the floor. If the unit is mounted above 2.4m (8'), the PIR will have a slightly longer range, but the "dead" zone directly below the unit will be increased. If the unit is mounted below 2.1m (7') the PIR section will have a shorter range and the "dead" zone directly below the detector will be decreased.

**NOTE:** Optimum 'Dual Detector' detection occurs when the coverage patterns of the PIR and MW section are matched. Differences between PIR and MW coverage patterns could reduce its effectiveness.

### REFLECTIVE SURFACES

Do not aim the detector at reflective surfaces or metal surfaces that could vibrate. Reflective surfaces could distort the PIR coverage pattern; vibrating metal surfaces or rotating fans could be seen as motion by the MW sensor.

### AIR FLOW

The FORCE 2 is protected against air flow and airborne contamination. However, do not locate the detector where it will be subject to direct high air flow such as fans, hot air vents or open windows.

### CONTAMINATION

Do not locate the detector near a source of oil or water vapour, such as a steaming kettle or cooking area in a kitchen.

### SUNSHINE

The FORCE 2 is resistant to white light but direct sunlight is a high energy source. Do not locate the detector where it will receive direct sunlight, particularly in the morning or evening when the sun is low and may shine in through a window.

### TEMPERATURE CHANGES

Do not aim the detector at objects that change temperature rapidly, such as heaters or ovens.

### OBSTRUCTIONS

Do not limit the desired area of protection with large objects such as plants or filing cabinets.

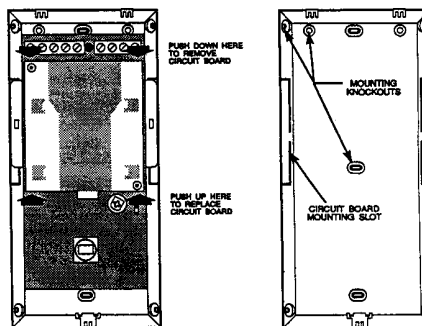
### PETS

Do not aim the detector where pets may trigger either the Microwave or PIR motion sensors. If both sensors are tripped, an alarm will result.

## DISASSEMBLING THE DETECTOR

To open the detector, pull on the front of the detector while pressing on the release at the bottom of the detector with a small screwdriver.

To remove the circuit board and sensor assembly from the detector case, press gently on the top of the MW detector until the circuit board unlocks and slides towards the bottom of the detector.



FCC ID: F53FORCE2-21

\*PATENT PENDING