BRAVO™ 5GB

Ceiling Mount PIR and Glassbreak Detector

INSTALLATION INSTRUCTIONS

The Bravo5GB is a ceiling mount motion and glassbreak detector in one housing designed to provide reliable protection for residential and commercial applications. The Bravo5GB uses a special Fresnel lens made for 360° detection in conjunction with a quad element PIR sensor optimized for uniform detection all around its field of view. Special attention is given to false alarm immunity against RF, static, electrical transient to ensure trouble free operation for many years.

The Bravo5GB is integrated with an advanced microprocessor based glassbreak sensor, designed to detect the sounds produced by the shattering of framed glass. The glassbreak detection scheme used on Bravo5GB is a result of an extensive research program, designed to study the properties of glass as well as the properties of sounds produced by the shattering of framed glass. The Bravo5GB offers a benefit of having motion and glassbreak detectors in one housing for many applications where both protections are required in the same room.

Features

- 360° coverage
- High level static and transient protection
- Excellent RF immunity
- 5 YEAR Warranty

Motion Detection
- Multi-Level Signal Processing *
- Quad element PIR sensor
- Temperature compensation
- Fast/Slow detection jumper J3
- LED ON/OFF jumper J4
- Super quiet operation

Glassbreak Detection
- Microcontroller-based Digital Signal Processing technology
- Dynamic Signal Processing* provides accurate detection of plate, laminated, wired and tempered glass types, while rejecting common "bell" or "ringing" type sounds
- "White noise" rejection mechanism
- Installer test mode for glassbreak sensor
- Alarm memory (latching LED) for glassbreak sensor

Patented

Specifications

Electrical
- Input Voltage: 9 - 14.5 V_{DC}
- Current (typical): 38/35 mA (alarm on/off) @12V_{DC}

Contact Rating
- Alarm Relay (PIR): 0.1A @24V_{DC}
- Alarm Relay (Glassbreak): 1.0A @24V_{DC}
- Tamper Switch: 0.1A @24V_{DC}

Size (diameter x height)
4.6" x 1.4" / 117 mm x 36 mm

Motion Detector Range (diameter)
- Detector placed 8 ft./ 2.4 m from floor: 24 ft./ 7.3 m
- Detector placed 10 ft./ 3.0 m from floor: 30 ft./ 9.2 m
- Detector placed 12 ft./ 3.6 m from floor: 40 ft./ 12.2 m

Glassbreak Detector Range

Glass Type	Thickness	Sizes L x W	Max. Range Level 1 Detection	Max. Range Level 2 Detection
Plate/ Tempered	1/8"/3.17mm to 1/4"/6.35mm	18"x18"/ 0.45x0.45m and up	25ft./7.5m	15ft./4.6m
		12"x12"/0.3x0.3 m to 18"x18"/0.45x0.45m	15ft./ 4.6m	10ft./3m
Wired/ Laminated	1/4"/ 6.35mm	18"x18"/ 0.45x0.45m and up	20ft./6m	Do not use
		12"x12"/0.3x0.3 m to 18"x18"/0.45x0.45m	10ft./3m	Do not use

Jumper Setting
- J1 Installer Test Mode
- J2 Alarm Memory
- J3 PIR Sensitivity
- J4 Motion LED ON/OFF
- J5 Glassbreak Detection Level

| Jumper	ON	OFF
J1	Glassbreak range test (AFT-100)	Normal operation
J2	LED latch for glassbreak	Normal operation
J3	Fast detection (motion)	Slow detection (motion)
J4	LED enabled (motion)	LED disabled (motion)
J5	Level 2 detection with lower glassbreak sensitivity	Level 1 detection with high glassbreak sensitivity

Environmental/Immunity
- RF Immunity:
  Radiated -10V/m +80% AM (@1KHz) from 80MHz to 1GHz
  Conducted -10V +80% AM (@1KHz) from 150KHz to 80MHz
- Transients @ wiring terminal: 2.4KV @ 1.2joules
- Operating temperature: 32 -122°F / 0 - 50°C
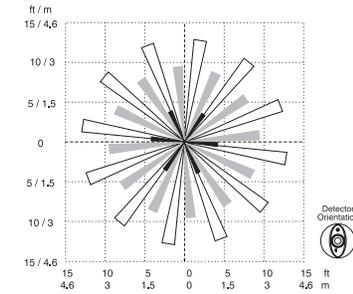- Humidity 5 - 95% RH non-condensing

Product Information
- BV-500GB: Form 'A' alarm contact (motion), form 'C' alarm contact (glassbreak)
- BV-501GB: Form 'A' alarm contact (motion), form 'C' alarm contact (glassbreak) and tamper switch
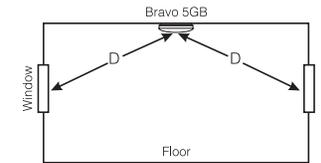- BV-502GB: Form 'C' alarm contact (motion and glassbreak) and tamper switch

Coverage

Side View
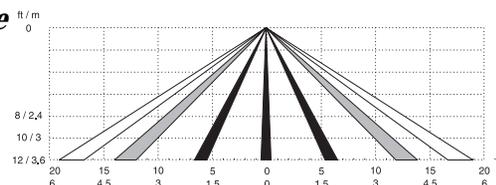
Top View (at 8 ft./ 2.4 m height)

Locating the Detector

Note: Maximum distance 'D' is limited by the range (Refer to the Glassbreak Detector Range chart)

The Bravo5GB is designed to be mounted on the ceiling of a dry indoor location for 360° coverage. Ensure that the expected path of an intruder must be perpendicular to the beam path. Use the coverage pattern indicated on the diagram to determine the best sensor location.

For optimum glassbreak protection, the detector should have a clear view of the protected glass. Curtains, blinds, and other window coverings will absorb sound energy from the shattering glass. In these cases, mount the detector as close as possible to the protected glass.

Avoid installation near noisy sources, such as speakers or other objects, which produce sounds continuously. Do not install the detector beyond the maximum recommended range, even if the AFT-100 shows additional range - future changes in room acoustics could reduce that additional range.

NOTE: The AFT-100 Glassbreak Simulator will provide the most reliable and accurate indication of the correct mounting location for the detector. Other simulators may trip the unit, but will not provide accurate indications.

Survey the mounting location and the area being protected for the following potential problems. For the glassbreak sensor, test false alarm immunity by creating any sounds in the room which will likely occur when the detector is armed. Avoid following sources of false alarms:

Reflective Surfaces
Do not aim the detector at reflective surfaces such as mirrors or windows as this may distort the coverage pattern or reflect sunlight directly onto the detector.

Air Flow
Avoid locations that are subject to direct high air flow such as near an air duct outlet.

Moisture
Do not locate the detector near sources of steam or oil.

The Sun
Do not aim the detector such that it will receive direct sunlight.

Obstructions

Do not limit the coverage by placing large objects within the detection area (such as plants, high shelves, filing cabinets etc.).

Noise Sources

Although the Bravo5GB is designed to be immune from ringing, bell and white noise sounds, avoid mounting the detector near such sources (i.e. telephones, doorbells, alarm bells/sirens, air conditioner units, water pipes, etc.).

Mounting

To open the case, gently twist the top cover counter-clockwise and lift it up from the bottom cover. Using a small screwdriver to remove the appropriate knockouts for wiring. Mount the bottom cover using the screws supplied.

To close the case, use the locating line on the bottom cover to align the tab on the top cover. Once the top cover is engaged, twist the top cover clockwise to lock it in place.

NOTE: Since no adjustment is necessary for the circuit board, it is not recommended that the installer remove the circuit board from the case. Also, **do not touch the microphone.**

Wiring

Refer to the following diagram for wiring instructions:
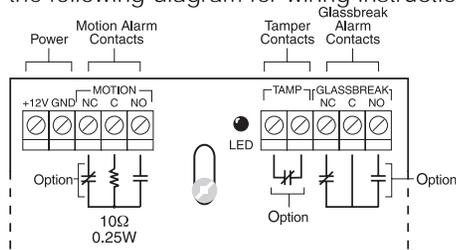
Setting up the Level of Detection (Jumper J5)

The Bravo5GB comes with a "detection level" jumper setting (Jumper J5), which allows the selection of one of 2 levels of detection, depending on the size and acoustics of the room in which the detector will be installed. This feature allows better selection of the required sensitivity, thereby improving the overall false alarm immunity of the detector.

The detector is factory preset for level 1 detection (Jumper J5=OFF). This is the highest sensitivity setting of the detector, and is designed for applications requiring high sensitivity and range, such as larger rooms, or rooms which contain a significant amount of sound-absorbing surfaces (such as carpets, furniture, drapes, etc.).

For rooms which are smaller, and contain a significant amount of hard, sound-reflective surfaces (such as kitchens, bathrooms, entrance vestibules, etc.), level 2 detection (Jumper J5=ON) provides a lower sensitivity setting which is more appropriate for these environments.

For most applications, the default setting of level 1 detection (Jumper J5=OFF) will be the best choice.

Power Up

Upon application of power, the LED will be on for approximately 90 seconds to indicate that the unit is warming up (Jumper J4=ON). After the 90 second warm-up period, the LED will turn off and the unit will respond to motion in the protected area.

Testing

IMPORTANT NOTE: Upon installation, the unit should be thoroughly tested to ensure proper working order. The end user should be instructed on how to perform walk tests, and should walk test the detector weekly.

Walk Test

1. Set PIR LED jumper J4 to the ON position.
2. Close the top cover.
3. Create movement in the entire area where coverage is desired. The LED on the unit will turn on whenever motion is detected. Should the coverage be incomplete, relocate the unit. Minor adjustment can be made by rotating the detector several degrees (use the detection pattern as a reference) to enhance detection at certain point in the protected area.
4. If desired, the alarm LED may be disabled by setting J4 to OFF after the completion of the walk test.
5. For typical operation the unit should be set on FAST (J3 ON). If the environment presents potential disturbances that cannot be avoided, set J3 to OFF for SLOW operation.
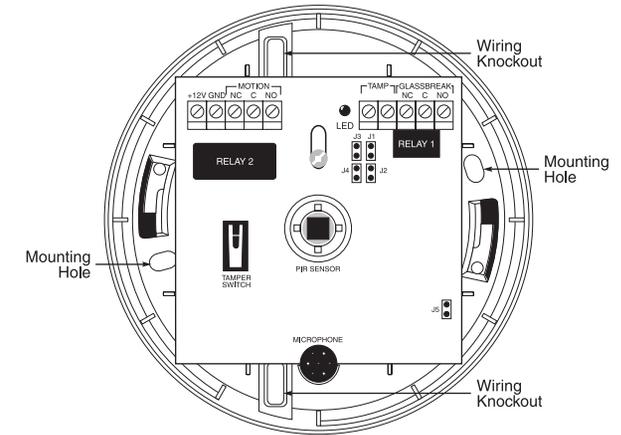
Glassbreak Test

1. Set the test mode jumper J1 to the ON position and PIR LED jumper J4 to the OFF position. This will disable the LED for motion detection. In addition, the alarm relay will latch into the alarm state, and will remain so until the jumper J1 is restored to the OFF position after testing.
   NOTE: The detector will not respond to the glassbreak simulator unless the test mode jumper J1 is in the ON position.
2. If Alarm Memory operation is desired (latching LED), set jumper J2 to the ON position.
   NOTE: The Alarm Memory indication is cleared by disconnecting the supply voltage for at least one second.
3. Close the top cover.
4. Set the AFT-100 Glassbreak Simulator to generate appropriate glassbreaking sound; use the plate glass setting if the glass type is unknown. To manually generate the sound, press the Single end of the rocker switch. For automatic or continuous operation, press the Continuous end of the rocker switch. The AFT-100 will generate the sound once every 10 seconds.
5. Hold the tester near the surface of the glass to be protected and aim it towards the detector.
6. The correct mounting location is indicated when the devices detects glassbreaking three successive times. If the detector does not respond each time, relocate the detector and repeat the test.
   NOTE: If the windows in question are covered by drapes or blinds, place the tester behind the closed window coverings.