The Bravo 5GB is a ceiling mount motion and glassbreak detector in one housing designed to provide reliable protection for residential and commercial applications. The Bravo 5GB 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, electric and transient to ensure trouble free operation for many years.

The Bravo 5GB 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 Bravo 5GB 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 Bravo 5GB 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

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

Specifications
- Electrical
  - Input Voltage: 9 - 14.5 Vcc
  - Current (typical): 38/35 mA (alarm on/off) @12Vcc

- Environmental/Immunity
  - RF Immunity (Not verified by UL):
    - 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 (verified to 85% by UL)

- 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
  - 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 Bravo 5GB 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, remove the securing screw from the unit then 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 backplate using the appropriate mounting screws (not provided).

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: Replace the securing screw for UL Listed applications.

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

Wiring
Refer to the following diagram for wiring instructions:

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 detector should be walk tested weekly by the user and annually by the installer.

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.

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.

Limited Warranty
Digital Security Controls Ltd. warrants that for a period of 12 months from the date of purchase, the product shall be free of defects in materials and workmanship under normal use and that in fulfillment of any breach of such warranty, Digital Security Controls Ltd. shall, at its option, repair or replace the defective equipment upon return of the equipment to its repair depot. This warranty applies only to defects in parts and workmanship and not to damage incurred in shipping or handling, or damage due to causes beyond the control of Digital Security Controls Ltd. such as lightning, excessive voltage, mechanical shock, water damage, or damage arising out of abuse, alteration or improper application of the equipment.

The foregoing warranty shall apply only to the original purchaser, and shall be in lieu of any and all other warranties, whether expressed or implied and of all other obligations or liabilities on the part of Digital Security Controls Ltd. Digital Security Controls Ltd. neither assumes responsibility nor authorizes any other person purporting to act on its behalf to modify or to change this warranty, nor to assume for it any other warranty or liability concerning this product.

In no event shall Digital Security Controls Ltd. be liable for any direct, indirect or consequential damages, loss of anticipated profits, loss of time or any other losses incurred by the buyer in connection with the purchase, installation or operation or failure of this product.

Motion detectors can only detect motion within the designated areas as shown in their respective installation instructions. They cannot discriminate between intruders and intended occupants. Motion detectors do not provide volumetric area protection. They have multiple beams of detection and motion can only be detected in unobstructed areas covered by these beams. They cannot detect motion which occurs behind walls, ceilings, floor, closed doors, glass partitions, glass doors or windows. Any type of tampering whether intentional or unintentional such as marking, painting, or spraying of any material on the lenses, mirrors, windows or any other part of the detection system will impair its proper operation.

Passive infrared motion detectors operate by sensing changes in temperature. However their effectiveness can be reduced when the ambient temperature rises near or above body temperature or if there are intentional or unintentional sources of heat in or near the detection area. Some of these heat sources could be heaters, radiators, stoves, barbecues, fireplaces, sunlight, steam vents, lighting and so on.

NOTE: Replace the securing screw for UL Listed applications.

Testing
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.

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.

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Digital Security Controls Ltd. warrants that for a period of 12 months from the date of purchase, the product shall be free of defects in materials and workmanship under normal use and that in fulfillment of any breach of such warranty, Digital Security Controls Ltd. shall, at its option, repair or replace the defective equipment upon return of the equipment to its repair depot. This warranty applies only to defects in parts and workmanship and not to damage incurred in shipping or handling, or damage due to causes beyond the control of Digital Security Controls Ltd. such as lightning, excessive voltage, mechanical shock, water damage, or damage arising out of abuse, alteration or improper application of the equipment.

The foregoing warranty shall apply only to the original purchaser, and shall be in lieu of any and all other warranties, whether expressed or implied and of all other obligations or liabilities on the part of Digital Security Controls Ltd. Digital Security Controls Ltd. neither assumes responsibility nor authorizes any other person purporting to act on its behalf to modify or to change this warranty, nor to assume for it any other warranty or liability concerning this product.

In no event shall Digital Security Controls Ltd. be liable for any direct, indirect or consequential damages, loss of anticipated profits, loss of time or any other losses incurred by the buyer in connection with the purchase, installation or operation or failure of this product.

Passive infrared motion detectors operate by sensing changes in temperature. However their effectiveness can be reduced when the ambient temperature rises near or above body temperature or if there are intentional or unintentional sources of heat in or near the detection area. Some of these heat sources could be heaters, radiators, stoves, barbecues, fireplaces, sunlight, steam vents, lighting and so on.

Warning: Digital Security Controls Ltd. recommends that the entire system be completely tested on a regular basis. However, despite frequent testing, and due to, but not limited to, criminal tampering or electrical disruption, it is possible for this product to fail to perform as expected.

Important Information: Changes or modifications not expressly approved by Digital Security Controls Ltd. could void the user’s authority to operate this equipment.

This Class B digital apparatus meets all requirements of the Canadian interference-causing equipment regulations.

Cet appareil numérique de la Classe B respecte toutes les exigences de règlement sur le matériel brouilleur du Canada.

FCC Compliance Statement
CAUTION: Changes or modifications not expressly approved by Digital Security Controls Ltd. could void your authority to use this equipment.

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Re-orient the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/television technician for help.

The user may find the following booklet prepared by the FCC useful: “How to Identify and Resolve Radio/Television Interference Problems”. This booklet is available from the U.S. Government Printing Office, Washington D.C. 20402. Stock # 004-000-00345-4.

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