



## INSTALLATION INSTRUCTIONS

The Bravo 2 and Bravo 3 are general purpose PIR detectors designed to provide reliable motion detection for residential and commercial applications. Both detectors are similar in design. The Bravo 3, however, provides a larger coverage area when greater range is required.

Exceptional design care and factory testing ensure years of trouble free performance. The detectors provide immunity against false alarms from RF, static, electrical transient and white light. Multilevel signal processing\*, temperature compensation and a large multi-beam lens design means that the human target will not slip by unnoticed—even on a hot summer day.

Four interchangeable lenses, wall or corner mounting and vertical adjustment provide application versatility. Your client will appreciate the small size and elegant simplicity of the case design.

Our Bravo 2 and Bravo 3 have a FIVE YEAR WARRANTY—your assurance of a trouble-free installation.

\* Protected by one or more of the following patents:  
Canada 2099971 US 5444432

### Specifications

|  |   |
|--|---|
| Operating voltage .....                | 9.5V <sub>DC</sub> -14.5V <sub>DC</sub> |
| Supply voltage ripple .....            | 3.0V <sub>PP</sub> @ 12V <sub>DC</sub>  |
| Standby current .....                  | 16mA                                    |
| Current in alarm .....                 | 20mA                                    |
| Contact rating .....                   | 100mA @ 24V <sub>DC</sub>               |
| Alarm contact resistor in common ..... | 10Ω 1/4W                                |
| Operating temp. ....                   | 0°C-50°C (32°F-122°F)                   |
| Storage temp. ....                     | -40°C-60°C (40°F-140°F)                 |
| Operating humidity .....               | 5-95% RH non-cond.                      |
| Storage humidity .....                 | up to 99% RH non cond.                  |
| RF immunity .....                      | 50 V/m over range 0.01MHz-1.2GHz        |
| Static immunity .....                  | 25kV                                    |
| Transient immunity .....               | 2.4kV @ 1.2 joules                      |
| White light immunity .....             | 20,000 Lux @ device                     |
| Walk detection speed .....             | 0.5-10/s (0.15-3m/s)                    |
| Coverage angle (BV-L1) .....           | 90° minimum                             |
| Vertical adjustment .....              | +5° to -10°                             |
| Mounting heights .....                 | 6-10.5/1.8-3.2m (nominal 7.5/2.3m)      |
| .....                                  | 4-5/1.2-1.5m (pet alley only)           |

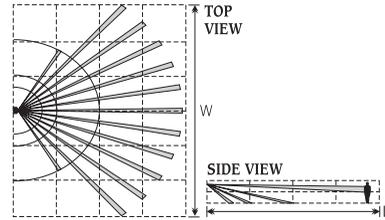
### Models

- BV-200/BV-300: Form A alarm contact
- BV-201/BV-301: Form A alarm contact & tamper switch
- BV-202/BV-302: Form C alarm contact & tamper switch

### Coverage

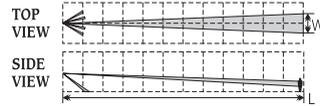
#### Wall-to-Wall lens (BV-L1)

- Bravo 2: 40'1 × 40' w (12.2×12.2m)
- Bravo 3: 50'1 × 60' w (15.2 × 18.3m)



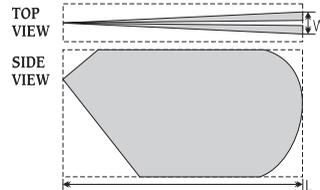
#### Corridor lens (BV-L2)

- Bravo 2: 70'1 × 6' w (21.3 × 1.8m)
- Bravo 3: 120'1 × 10.5' w (36.5 × 3.2m)



#### Curtain lens (BV-L3)

- Bravo 2: 40'1 × 3.5' w (12.2 × 1.1m)
- Bravo 3: 50'1 × 4.4' w (15.2 × 1.3m)



#### Pet Alley lens (BV-L4)

- Bravo 2: 40'1 × 40' w (12.2 × 12.2m)
- Bravo 3: 50'1 × 60' w (15.2 × 18.3m)

### Locating The Detector

Select a detector location that will provide the coverage required. Consider the following to avoid false alarms:

- 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.
- Avoid locations that are subject to direct high **air flow** such as near an air duct outlet.
- Do not locate the detector near sources of **moisture** such as steam or oil.
- Do not locate the detector in the path of direct or reflected (mirror) **sunlight**.
- For premises with **pets**, use the pet alley lens.
- Do not limit the coverage by large **obstructions** in the detection area such as plants or cabinets.

### Mounting

To open the case, use a small flat blade screwdriver and gently push in the tab at the bottom of the case and pull the cover straight out at the bottom. Loosen the PCB screw, and push the board up as far as it will go. Using a small screwdriver, remove the appropriate knockouts for the mounting screws. Remove the left and/or right wiring entrance knockouts located at the top of the backplate. Mount the backplate to the wall using the screws supplied.

### Vertical Adjustment

*NOTE: Range and dead zones may vary due to settings.*

Using the Mounting Height Chart (*see below*), set the vertical adjustment for the desired coverage. The height will be indicated by the gauge located at the bottom right hand corner of the circuit board. Ensure that the PCB retaining screw is tightened just enough to prevent board movement.

Moving the circuit board *down* will *increase* the far range and move the near beams farther out from the mounting wall.

Moving the circuit board *up* will *reduce* the far range and bring the near beams closer to the mounting wall. Moving the board *down* too much will cause the far beams to “look” above the target. As a result, the range may appear shorter.

### Mounting Height Chart

| Height<br>ft/m | Setting for Full Range (by lens type) |       |       |       |
|----------------|---------------------------------------|-------|-------|-------|
|                | BV-L1                                 | BV-L2 | BV-L3 | BV-L4 |
| 10'/3m         | 0.00                                  | -0.25 | 0.00  | —     |
| 8'/2.4m        | +0.50                                 | +0.25 | 0.00  | —     |
| 7'/2.1m        | +0.75                                 | +0.25 | 0.00  | —     |
| 6'/1.8m        | +1.00                                 | +0.50 | 0.00  | —     |
| 5'/1.5m        | —                                     | —     | —     | 0.00  |
| 4'/1.2m        | —                                     | —     | —     | 0.00  |

### Jumpers

There are two jumpers on the detector circuit board. JUMPER J1 will enable/disable the alarm LED. If J1 is OFF, the LED will not operate on alarm. If J1 is ON the LED will operate on alarm.

JUMPER J2 selects between fast and slow operation. For a typical environment, the unit should be set to “fast” (J2 ON). If the environment presents potential disturbances which cannot be avoided, set J2 to “slow” (J2 OFF).

*NOTE: When using the corridor lens, set J2 to ON.*

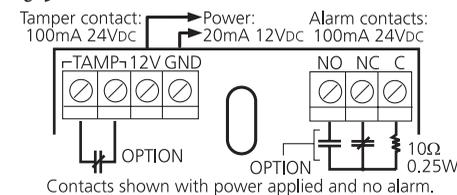
### Changing Lenses

The detector is supplied with the wall-to-wall lens (BV-L1). To change the lens, release the top tab and pull the lens holder out. This action releases the lens. Insert the new lens with the GROOVES FACING INWARD. The bottom of the lens is indicated by two triangular indentations. Ensure that the lens is centered and then reattach the lens holder. The lens holder will snap into place sealing the lens into position.

*NOTE: The corridor lens should not be used for corridors less than 6'/1.8m wide. Ensure the beams are aimed directly down the centre of corridor.*

### Wiring

*NOTE: This unit is UL-listed and should be connected to a listed control unit or power supply providing at least 4 hours of standby power.*

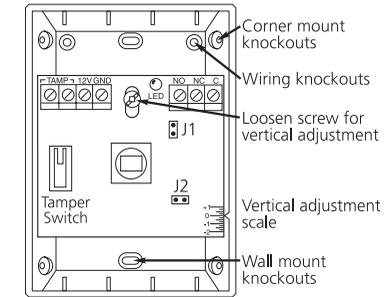


### Walk Testing

*IMPORTANT NOTE: Upon installation, the unit should be thoroughly tested to verify proper operation. The end user should be instructed on how to perform a walk test weekly.*

Once the detector has been set up, create motion in the entire area where coverage is desired. Should the coverage be incomplete, readjust or relocate the detector. Once coverage is as required, the alarm LED may be disabled by setting J1 to OFF.

### Mounting Brackets



Use the optional DM-W wall mount and DM-C ceiling mount brackets to solve placement problems. The brackets allow for vertical and horizontal positioning of the detector. The DM-C can be tilted up or down and rotated through 90° to obtain the best position for optimal coverage. Contact your DSC distributor for more information regarding these mounting solutions.

### Limited Warranty

Digital Security Controls Ltd. warrants that for a period of five years 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 buyer, and is 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, 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 masking, 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.

*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.*

