

# BRAVO<sup>®</sup> 4 Series

## Quad Motion Detector

### INSTALLATION INSTRUCTIONS

#### FEATURES

- QUAD element low noise sensor
- Four interchangeable lenses
- High level static protection
- High level transient protection
- High level white light immunity
- Excellent RF immunity
- Temperature compensation
- Energy analysis circuit
- Dual channel processing
- LED on / off jumper
- Vertical adjustment
- SMD construction
- Super quiet operation
- Wall / corner mounting
- Small size
- Blends with any decor

#### INTRODUCTION

The Bravo4 is a general purpose quad PIR designed to provide reliable motion detection for large residential and commercial applications.

Exceptional design care and factory testing ensure years of trouble free performance. Immunity against false alarms from RF, static, electrical transient and white light are all designed in features.

Energy analysis, dual channel signal processing, temperature compensation and large multi-beam lens design means 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, and your client will appreciate the small size and elegant simplicity of the case design.

#### SPECIFICATIONS

- Operating voltage ..... 9.5VDC-14.5VDC
- Supply voltage ripple ..... 3.0V pp @ 12VDC
- Standby current ..... 18mA
- Current in alarm ..... 16mA
- Contact rating (alarm & tamper) ..... 100mA @ 24VDC
- Alarm contact resistor in common ..... 10 ohm ¼W
- Operating temperature ..... 0°C to 49°C (32°F to 120°F)
- Storage temperature ..... -40°C to 60°C (-40°F to 140°F)
- Operating humidity ..... 5% to 95% RH non-condensing
- Storage humidity ..... up to 99% RH non condensing
- RF immunity ..... 20 V/m over range 0.01MHz-1.2GHz
- Static immunity ..... 25kV

- Transient immunity ..... 2.4kV @ 1.2 joules
- White light immunity ..... 20,000 Lux at the detector
- Walk detection speed ..... 0.5' to 10'/s (0.15m - 3m/s)
- Coverage angle (wall-to-wall lens) ..... 90° minimum
- Vertical adjustment ..... +5° to -10° (see charts)
- Mounting heights ..... 6' to 10' (nominal 7.5')  
2m to 3m (nominal 2.3m)  
4' to 5' (pet alley only)  
1.2m to 1.5m (pet alley only)

**NOTE: White light and RF Immunity not verified by UL.**

#### COVERAGE

- Wall to Wall lens (BV-L1) 50' L x 60' W (16m x 18m)
- Corridor lens (BV-L2) 60' L x 5' W (18m x 1.5m)
- Curtain lens (BV-L3) 50' L x 4.4' W (16m x 1.3m)
- Pet Alley lens (BV-L4) 50' L x 60' W (16m x 18m)

#### DIMENSIONS

3.5"H x 2.5"W x 1.87"D (89mmH x 64mmW x 48mmD)

#### COLOUR

White case with light gray lens

#### SHIPPING WEIGHT

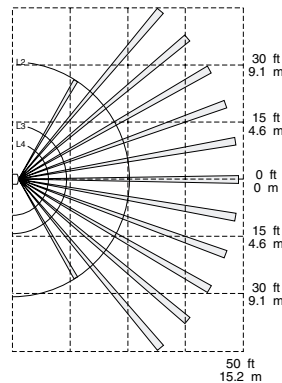
6 oz. (190 g)

#### MODELS

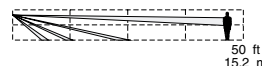
- BV-400UL Form A alarm contact
- BV-401UL Form A alarm contact & tamper switch
- BV-402UL Form C alarm contact & tamper switch

#### WALL-TO-WALL LENS

##### TOP VIEW

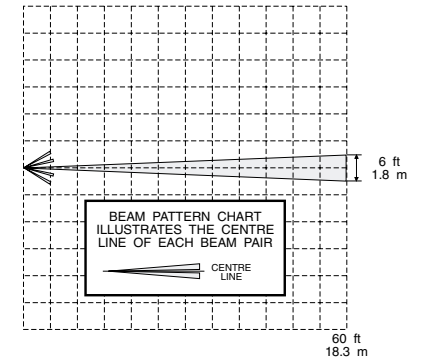


##### SIDE VIEW

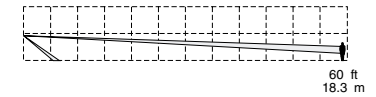


#### CORRIDOR LENS

##### TOP VIEW

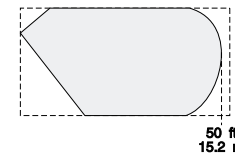


##### SIDE VIEW



#### CURTAIN LENS

##### SIDE VIEW



##### TOP VIEW



#### 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 using the appropriate mounting screws (not supplied).

#### MOUNTING HEIGHT CHART

HEIGHT ft / m	SETTING FOR FULL RANGE			
	WALL/WALL	CORRIDOR	CURTAIN	PET ALLEY
10' / 3 m	0.00	-0.25	0.00	=====
8' / 2.4 m	+0.50	+0.25	0.00	=====
7' / 2.1 m	+0.75	+0.25	0.00	=====
6' / 1.8 m	+1.00	+0.50	0.00	=====
5' / 1.5 m	=====	=====	=====	0.00
4' / 1.2 m	=====	=====	=====	0.00

## LOCATING THE DETECTOR

Select a detector location that will provide the coverage required keeping in mind the following potential problems

**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.

**Sun** Do not aim the detector such that it will receive direct or reflected (mirror) sunlight,

**Pets** If there are pets on the premises, use the pet alley lens.

**Obstructions** Do not limit the coverage by large objects within the detection area such as plants or filing cabinets.

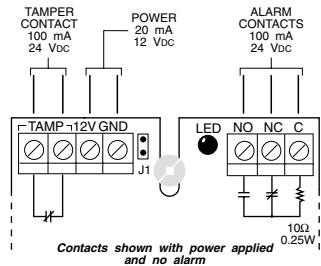
## VERTICAL ADJUSTMENT

Using the Mounting Height Chart, set the vertical adjustment to obtain the desired coverage. Ensure that the PCB retaining screw is tightened just enough to prevent board movement.

**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.

**NOTE:** The corridor lens should not be used in corridors that are less than 5' in width and the installation should be carefully checked to ensure that the beams are aimed directly down the centre of the 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 by power.

## CHANGING LENSES

The Bravo4 is supplied with the "wall-to-wall" lens. To change the lens, release the top tab and pull the lens holder out. This action releases the lens. Insert the lens with the GROOVES FACING INWARD. The bottom of the lens is indicated by two triangular indentations. Ensure that the lens is centred left to right then reinstall the lens holder. The lens holder will snap into place sealing the lens into position.

## WALK TESTING

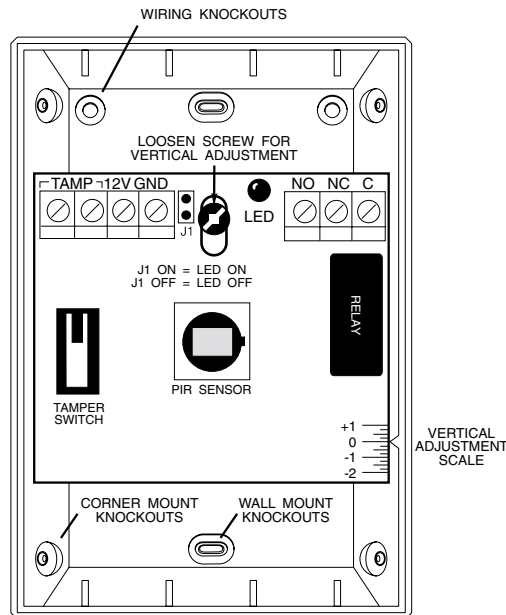
Once the detector has been set up, walk test the entire area where coverage is desired. Should the coverage be incomplete, re-adjust or relocate the detector to obtain full coverage. Once coverage is as required, the alarm LED may be disabled by setting J1 to OFF.

**IMPORTANT NOTE:** Upon installation, the unit should be thoroughly tested to verify proper operation.

*The detector should be walk tested weekly by the end user and yearly by the installer.*

## DM-C and DM-W Detector Mounting Brackets

Use the optional DM-W Wall Mount and DM-C Ceiling Mount brackets to solve difficult placement problems. The DM-W and DM-C mount to either the wall or ceiling and allow for full vertical and horizontal positioning of the motion detector - the detector can be tilted up or down and rotated through 90° to obtain the best position for optimal coverage. The Bravo PIR has been designed to be fully compatible with the DM-W and DM-C brackets. Contact your DSC distributor for more information.



## 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 fulfilment 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 purchase, 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.



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Direct all comments and suggestions concerning DSC publications to [pubs@dsc ltd.com](mailto:pubs@dsc ltd.com)