BRAVO™

BRAVO Series
PIR Motion Detectors

BRAVO

Simply the best passive infrared motion detectors available in the industry! Backed by years of research and exhaustive testing, Bravo series motion detectors take advantage of microprocessor-based multi-level signal processing software and specially designed lenses to deliver superior intruder detection and reliable long-term operation while minimizing false alarms.

For normal home and office environments, the Bravo2 is the efficient choice. For larger spaces, the Bravo3 provides expanded coverage, while the Bravo4 is especially suited for use in highly changeable conditions. The ceiling-mounted Bravo5 provides the dual benefit of uniform 360° motion detection and optional glass break detection in one housing. And Bravo6 is not only immune to large pets – its intruder detection is the best in the field.

The Bravo series takes motion detectors to a new level of detection sensitivity, stability and false alarm immunity in residential, commercial and industrial settings.

FEATURES

- Multi-level PIR signal processing†
- Single/dual element low noise sensor
- High level static and transient protection
- Exceptional white light immunity
- Excellent RF immunity
- Temperature compensation
- LED on/off jumper
- Vertical adjustment
- Super quiet operation
- Wall, corner, or ceiling mounting
- Attractive styling for any decor
- 5 year warranty

BRAVO2
- Ideal for normal home, office, and industrial settings

BRAVO3
- Accurate coverage of large 50' x 60' (15 x 18m) areas

BRAVO4
- Quad design sensors for severe environments

BRAVO5
- 360° ceiling-mount motion detector with optional integral glass break detector

BRAVO6
- Dual PIR sensors with High Density Digital Analysis* and multi level signal processing for better intruder catch and immunity to pets weighing up to 85lbs/38kg
- Digital temperature compensation

DSC®
Security Products

* patent pending † patented

BRAVO

BRAVO2™

Bravo2 is especially suitable for residential security systems, and all normal office and commercial applications.

MODELS

BV-200	Form 'A' alarm contact
BV-201	Form 'A' alarm contact & tamper switch
BV-202	Form 'C' alarm contact & tamper switch

LENS COVERAGE

Wall-to-Wall lens	(BV-L1)	40'L x 40'W (12.2 x 12.2m)
Corridor lens	(BV-L2)	70'L x 6'W (21.3 x 1.8m)
Curtain lens	(BV-L3)	40'L x 3.5'W (12.2 x 1.1m)
Pet Alley lens	(BV-L4)	40'L x 40'W (12.2 x 12.2m)

SPECIFICATIONS for BRAVO2, 3, & 4

Operational :

Coverage angle (wall to wall lens)	90° minimum
Vertical adjustment	+5 to -10°
Mounting height.	6' to 12' (2 to 3.5m) nominal 7.5' (2.3m)
Walk detection speed	0.5 to 10ft/s (0.15 to 3.0m/s)
Alarm duration	2 to 3 seconds

Environmental/Immunity :

Operating temperature	32 to 122°F (0 to 50°C)
Operating humidity	5% to 95% non-condensing
RF immunity	Bravo2 & 3 ...50V/m from 0.01 to 1,200MHz Bravo4 ...20V/m from 0.01 to 1,200MHz
Transient immunity	2.4kV @ 1.2 joules
Static immunity	25kV
White light immunity	20,000Lux at the detector

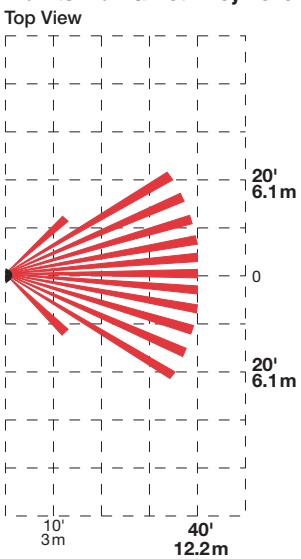
Electrical :

Operating voltage	9.5 to 14.5VDC
Ripple tolerance	3Vpp at 12VDC
Standby current	16mA at 12VDC
Alarm current	20mA at 12VDC
Contact ratings	100mA at 24VDC
Alarm contact series resistance	10ohm 0.25W

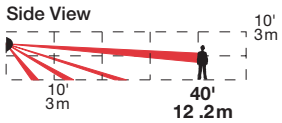
Physical :

Dimensions	3.5"H x 2.5"W x 1.87"D (8.9 x 6.4 x 4.8cm)
Mounting	wall or corner
Color	designer white, with light grey lens

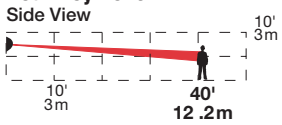
Wall to Wall & Pet Alley Lens



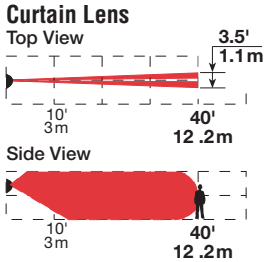
Wall to Wall Lens



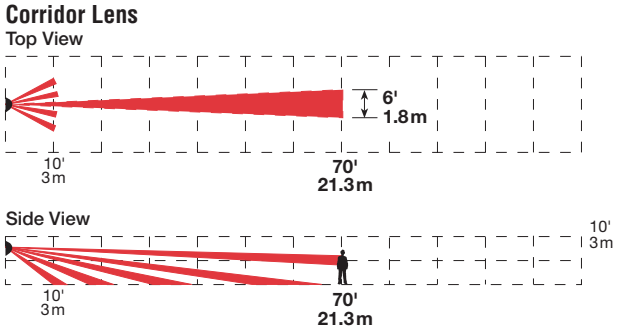
Pet Alley Lens



Curtain Lens



Corridor Lens



BRAVO 3™

Bravo 3 can be used for all residential, commercial and industrial applications requiring longer range sensing capability without compromising accuracy.

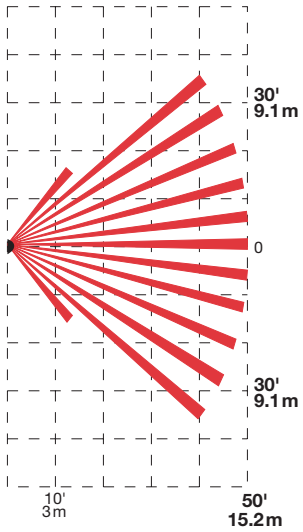
MODELS

BV-300	Form 'A' alarm contact
BV-301	Form 'A' alarm contact & tamper switch
BV-302	Form 'C' alarm contact & tamper switch

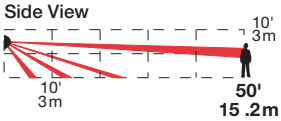
LENS COVERAGE

Wall-to-Wall lens	(BV-L1) . . . . . .50'L x 60'W	(15.2 x 18.3m)
Corridor lens	(BV-L2) . . . . . .120'L x 10.5'W	(36.6 x 3.2m)
Curtain lens	(BV-L3) . . . . . .50'L x 4.4'W	(15.2 x 1.3m)
Pet Alley lens	(BV-L4) . . . . . .50'L x 60'W	(15.2 x 18.3m)

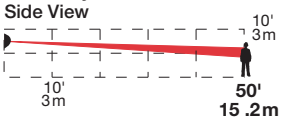
Wall to Wall & Pet Alley Lens
Top View



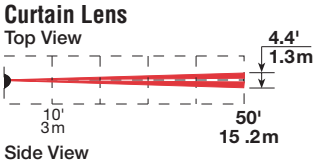
Wall to Wall Lens
Side View



Pet Alley Lens
Side View



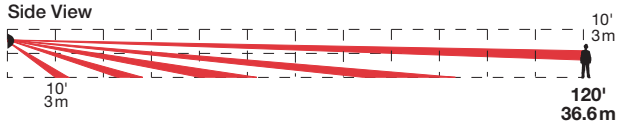
Curtain Lens
Top View



Side View

Corridor Lens
Top View

Side View



BRAVO 4™

Bravo 4 has a quad design, suitable for commercial, institutional, and industrial applications where abnormally severe or highly changeable environmental conditions are present.

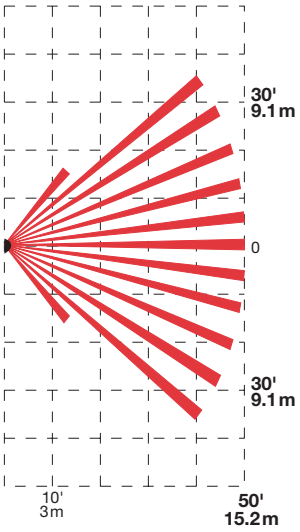
MODELS

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

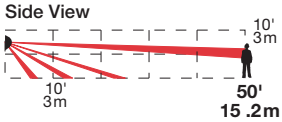
LENS COVERAGE

Wall-to-Wall lens	(BV-L1) . . . . . .50'L x 60'W	(15.2 x 18.3m)
Corridor lens	(BV-L2) . . . . . .60'L x 5'W	(18.3 x 1.5m)
Curtain lens	(BV-L3) . . . . . .50'L x 4.4'W	(15.2 x 1.3m)
Pet Alley lens	(BV-L4) . . . . . .50'L x 60'W	(15.2 x 18.3m)

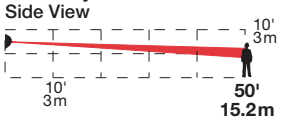
Wall to Wall & Pet Alley Lens
Top View



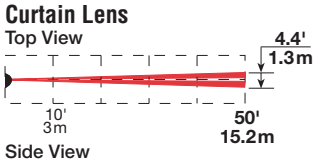
Wall to Wall Lens
Side View



Pet Alley Lens
Side View

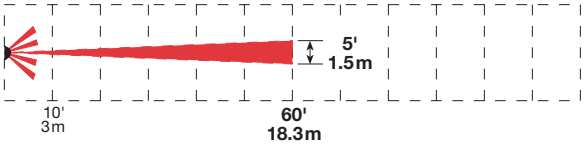


Curtain Lens
Top View

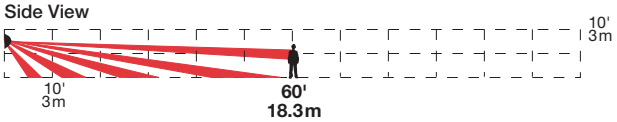


Side View

Corridor Lens
Top View



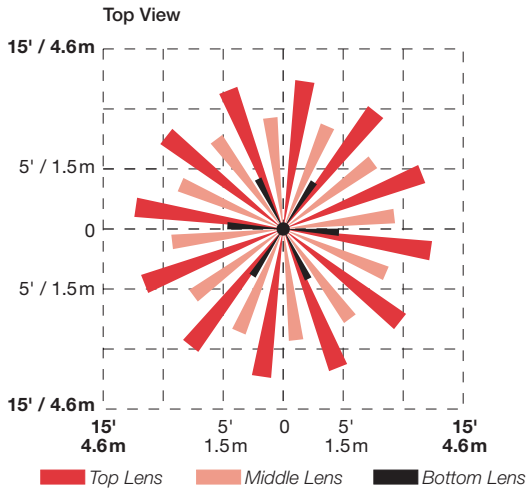
Side View

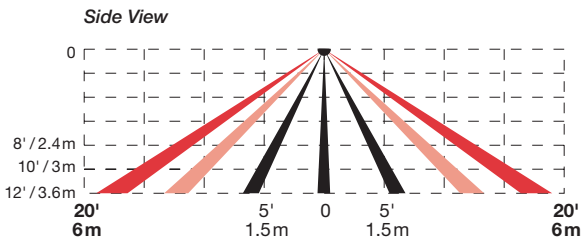


BRAVO 5™

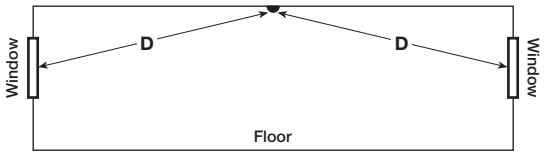
A 360° ceiling-mount quad element PIR motion detector with optional integral glass break detector, Bravo 5 is ideal for rooms requiring a uniform 360° detection pattern *or* for rooms requiring the benefit of having both motion and glass break detectors in one housing.

360° QUAD Element PIR... *at 8' (2.4m) height*





360° Glass Break Detector



MODELS...Motion Alone

BV-500	Form 'A' alarm contact
BV-501	Form 'A' alarm contact & tamper switch
BV-502	Form 'C' alarm contact & tamper switch

MODELS...Motion & Glass Break

BV-500GB	Form 'A' alarm contact (motion), form 'C' contact (glass break)
BV-501GB	Form 'A' alarm contact (motion), form 'C' contact (glass break) & tamper switch
BV-502GB	Form 'C' alarm contact (motion), form 'C' contact (glass break) & tamper switch

SPECIFICATIONS

Electrical :

Input voltage . . . . . .9 to 14.5 VDC
Current (typical with glass break) . . .38/35 mA (alarm on/off) @ 12 VDC
Current (typical without glass break) . .18/15 mA (alarm on/off) @ 12 VDC

Contact Rating :

Alarm relay (PIR) . . . . . .0.1 A @ 24 VDC
Alarm relay (glass break) . . . . . .1.0 A @ 24 VDC
Tamper switch . . . . . .0.1 A @ 24 VDC

Environmental/Immunity :

Operating temperature . . . . . .32 to 122°F (0 to 50°C)
Operating humidity . . . . . .5% to 95% non-condensing
Radiated immunity . . . .10 V/m +80% (AM @ 1 kHz) from 80 MHz to 1 GHz
Conducted immunity . . .10 V +80% (AM @ 1 kHz) from 150 kHz to 80 MHz
Transient immunity . . . . . .2.4 kV @ 1.2 joules

Physical :

Dimensions . . . . . .4.6"Ø x 1.4"H (11.7 x 3.6 cm)
Color . . . . . .designer white

360° PIR DETECTOR RANGE

Mounting height	*8' (2.4 m)*	*10' (3.0 m)*	*12' (3.6 m)*
Detection diameter at floor	24' (7.3 m)	30' (9.2 m)	40' (12.2 m)

360° GLASS BREAK DETECTOR RANGE

Glass Type & Thickness	*Sizes*	*Maximum 'D' Detection Range Level 1†*	*Level 2†*
Plate/Tempered			
1/8" - 1/4" thick (3 - 6 mm)	18" x 18" and up (46 x 46 cm)	25' (7.6 m)	15' (4.6 m)
	12" x 12" to 18" x18" (30 x 30 to 46 x 46 cm)	15' (4.6 m)	10' (3 m)
Wired/Laminated			
1/4" thick (6 mm)	18" x 18" and up (46 x 46 cm)	20' (6 m)	DO NOT USE
	12" x 12" to 18" x18" (30 x 30 to 46 x 46 cm)	10' (3 m)	

†Jumper selectable

BRAVO6™

Bravo6 features dual PIR sensors incorporating High Density Digital Analysis* and multi-level signal processing with a vertically interleaving beam pattern for superior intruder detection while being immune to pets weighing up to 85lbs/38kg.

SPECIFICATIONS

Operational :

Mounting height	6' to 10' (2 to 3m)
Lens horizontal pattern angle	100° maximum
Vertical adjustment	from +5 to -10°
Alarm duration	2 to 3 seconds
Walk speed	0.5 to 10ft/s (0.15 to 3.0m/s)

Environmental/Immunity :

Operating temperature	32 to 122°F (0 to 50°C)
Operating humidity	5% to 95% non-condensing
RF immunity	10V/m 80% A.M., from 80 to 1,000MHz
Transient immunity	2.4kV at 1.2 joules
Static immunity	15kV
White light immunity	4kLux

Electrical :

Operating voltage	9.5 to 14.5VDC
Ripple tolerance	3Vpp at 12VDC
Standby current	17.5 mA at 12VDC
Alarm current	25 mA at 12VDC
Contact ratings	100mA at 24VDC
Alarm contact series resistance	10ohm 0.25W

Physical :

Dimensions	4.9"H x 2.76"W x 1.75"D (12.5 x 7.0 x 4.5cm)
Mounting	wall or corner
Color	designer white, with white lens

* patent pending

MODELS

BV-600 Form 'A' alarm contact

BV-601 Form 'A' alarm contact & tamper switch

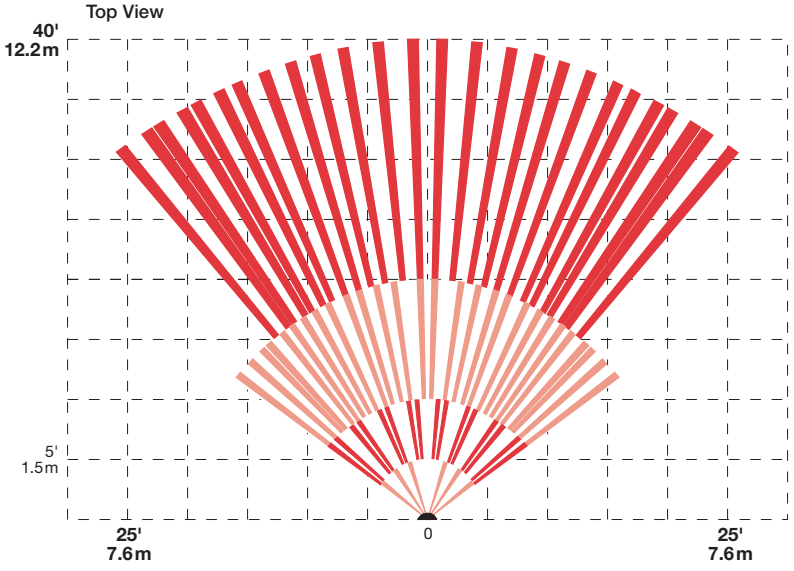
BV-602 Form 'C' alarm contact & tamper switch

LENS COVERAGE

Dual sensor PIR lens pattern . . .40' L x 50' W (12.2 x 15.2m)

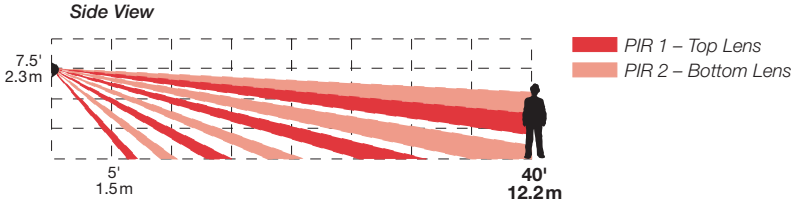
Multi-Level Dual Sensor PIR Lens

Top View



(For clarity, overlapping beams are not shown)

Side View



Multi-level signal processing with a vertically interleaving beam pattern

North American # 29002336 Rev.2

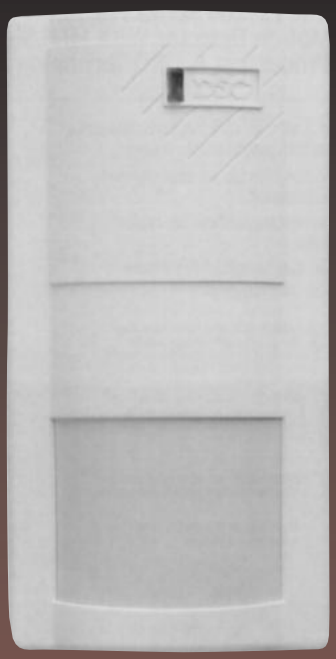
FORCE 2®

PIR/MICROWAVE MOTION DETECTOR

FEATURES:

- Multi-level PIR signal processing**
- Digital Microwave signal processing
- DRO microwave technology for low current and reliable operation
- MOV transient/static protection
- High RF immunity with SMD construction
- Exceptional white light immunity
- Microcontroller low voltage reset circuit
- Optional tamper switch
- Optional Form 'C' alarm contacts
- Digital temperature compensation (F2-200, F2-220 only)
- Adjustable microwave detection pattern to match room size (F2-200, F2-220 only)

** patent pending



Force 2®

FORCE 2 motion detectors are Dual Detectors employing both Microwave (MW) and Passive Infrared (PIR) motion sensors. The sensors are combined through a microprocessor to provide "intelligent" motion detection designed to eliminate "single detector" false alarms.

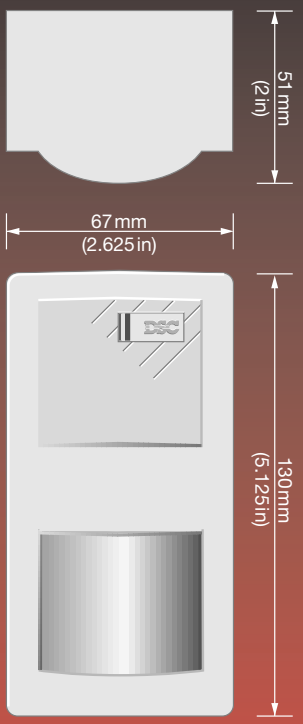
Significant new technical features such as Multi-Level PIR signal processing, digital temperature compensation, a high reliability DRO microwave sensor, and digital MW signal analysis combine for a new level of detection sensitivity, stability, and false alarm immunity.

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

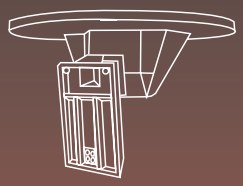
DSC® Security Products

SPECIFICATIONS*

- **ELECTRICAL :**
  - Operating 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
  - Alarm contact series resistance ..... 10 Ω 0.25 W
- **OPERATION :**
  - Alarm duration ..... 2 seconds
  - Walk speed ..... 0.5 to 10 ft/s
  - ..... (0.15 to 3.0 m/s)
  - Nominal mounting height ..... 7.5 ft (2.3 m)
  - Jumper ..... Alarm LED on/off
- **IMMUNITY :**
  - RF immunity ..... 30 V/m over range 0.01 to 1200 MHz
  - Transients at terminals ..... 2.4 kV at 1.2 joules
  - Static discharge immunity ..... 25 kV
  - White light ..... 20,000 Lux at the detector
  - Operating temperature ..... 32° to 122°F (0° to 50°C)
  - Humidity ..... 5% to 95% RH non-condensing



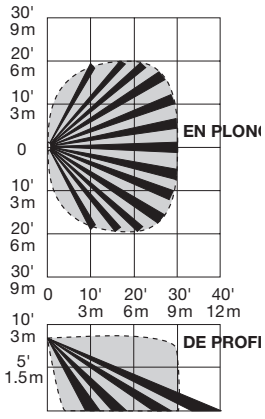
DM-C
Ceiling Mounting Bracket



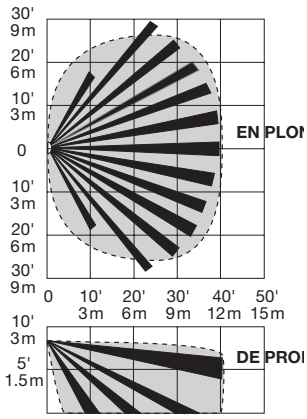
DM-W
Wall Mounting Bracket

F2-200, 210, 220 - with Form 'A' alarm contact
F2-201, 211, 221 - with Form 'A' alarm contact & tamper switch
F2-202, 212, 222 - with Form 'A' alarm contact & tamper switch

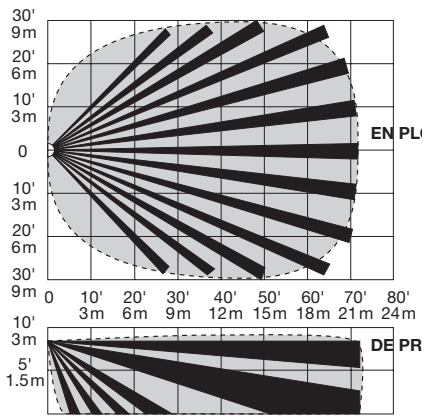
F2-210



F2-200



F2-220



	F2-210	F2-200	F2-220
Coverage (max. L x max. W) :	30 x 40 ft (9 x 12 m)	40 x 50 ft (12 x 15 m)	70 x 60 ft (21 x 18 m)
MW range adjust :		10 to 40 ft (3 to 13 m)	30 to 70 ft (9 to 21 m)
Temperature compensation :		over entire operating range	over entire operating range

ARCHITECTS SPECIFICATIONS

* Specifications are subject to change without notice

Motion detectors shall be the dual detector type, employing both Microwave and Passive Infrared motion sensors. To prevent false alarms, both sensors must detect motion within a 10 second period of each other before any alarm is sent.

For additional reliability and false alarm protection, detectors shall employ MOV transient/static protection, SMD construction for high RF immunity, protection from white light, and microcontroller low voltage reset circuit.

Short, medium, and long range motion detectors shall be selected as required to suit the room in which they are to be installed. Medium and long range detectors shall have adjustable microwave detection pattern and built-in temperature compensation.

Detectors shall have built-in tamper switch and form 'A' or 'C' alarm contacts as required to suit the application.

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DSC® Security Products
Digital Security Controls 1645 Flint Road, Downsview, Ontario M3J 2J6
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