TERRA UNIVERSAL.COM
Critical Environment Solutions

Quick-Start Operating Guide   Document No. 1800-83

ULPA-Filtered High-Velocity Air Curtain

Your Comprehensive Equipment Source

Particle Filtration
—
Laminar Flow Control
—
Ultra-Clean Materials

Vibration Isolation
—
Ergonomics
—
Process Gas Generation

Temperature Control
—
Biohazard Containment
—
Sterilization

Static Control
—
Chemical Vapor Removal
—
Anti-Microbial Treatments

Humidification/ Dehumidification
—
Vacuum Control
—
Exhaust Fume Ventilation

Safety Notice

A thorough familiarity with all operating guidelines is essential to safe operation of the product. Failure to observe safety precautions could result in poor performance, damage to the system or other property, or serious bodily injury or death.

The following symbols are intended to call your attention to two levels of hazard involved in operation:

The information presented here is subject to change without notice.

⚠ CAUTION — **Cautions are used when failure to observe instructions could result in significant damage to equipment.**

⚠ WARNING — **Warnings are used when failure to observe instructions or precautions could result in injury or death.**

1.0 Introduction

This manual provides information on installing and operating your ULPA-Filtered High-Velocity Air Curtain from Terra Universal.

By studying this document carefully, you can be assured of a long, efficient service life from your system.

2.0 Description

Terra Universal's Air Curtain offers an effective way to prevent contaminants from entering into a controlled clean environment. A sensor mounted directly above the doorway activates the unit when the door is opened or an operator is detected, directing ULPA-filtered air downward at up to 1900 feet/minute to reduce particle influx as personnel enter or exit the clean room. The ULPA filters are rated at 99.999% of all particles as small as 0.12 microns. This barrier of high-velocity, clean air also removes particles from clean room garb and minimizes escape of conditioned air from the clean room, reducing load on the HVAC system.

3.0 Installation

The ULPA-Filtered High Velocity Air Curtain should be installed above the door frame on the dirty side. Keyhole slots are provided on the rear housing to accommodate mounting hardware.

Because site locations and mounting surface materials differ, installation should be performed by a qualified contractor, using fasteners or customer-supplied mounting plate(s) appropriate to the air Curtain's weight (129 lbs.) and size (approximately 28"W x 19"H).

The unit comes with a 6 foot cord to plug into existing electrical outlet.

4.0 Operation

The Air Curtain has two operational settings:
1. Motion Detection
   - Engage the right switch if motion sensor is desired.
   - Controlled by the motion sensor, the Air Curtain maintains fan operation for 5 seconds after motion is no longer detected and then turns off.
   - To resume operation, either resume motion under the sensor or turn on the left (continuous operation) switch.
   - Pressing the Motion Control operation switch while the unit is in operation will shut the fan off.
   - Refer to separate documentation (appended to this manual) on motion control sensor adjustment.

2. Continuous Operation
   - Engage the left button if continuous operation is desired.
   - The continuous operation button will override the motion detection switch. If selected, the unit will maintain continuous operation until the button is disengaged.

5.0 Sensor Configuration

Refer to attached manufacturer manuals for sensor configurations.

6.0 Specifications

Overall Dimensions:	48"W X 17.5"D X 19"H
Air Velocity:	1,900Ft/Min
Material (Housing)	304 Stainless Steel
Weight:	129 lbs.

Blower Specifications (1 per Air Curtain):

Manufacturer:	Grainger
Model #	6E820
Power Rating	1/2HP
Phase	Single
Max. Amps	5.2
Max. RPM	1745

Filters Specifications (4 per Air Curtain): Ultra Low Particulate Air (ULPA) rated 99.999% efficient at 0.12-micron particle size.

ULPA Filter
Model #	2100-29	(2 required)
Dimensions:	12" X 12" X 3"	
Model #	1681-10	(1 required)
Dimensions:	27.75" X 13" X 3"	

Prefilter
Model #   9202-50   (2 required)
    Dimensions: 12" X 12" X 1"
Model #   1681-04A   (1 required)
    Dimensions: 27.75" X 13" X 3"

7.0 Maintenance

Under typical conditions (2 hours of operation per day), filters should be replaced every year.

For optimal operation, the Air Show should be monitored periodically with an Air Velocity Meter. Air velocity will initially average about 1,900 feet/minute, measured at air curtain. When reading drops to below 80% of the initial value, the corresponding HEPA filter is approaching the end of its useful service life and should be replaced.

8.0 Filter replacement

⚠ **CAUTION: Because ULPA filter mini-pleats are easily damaged, always handle the filter by the edges. Avoid touching the filter face.**

⚠ **Warning: Before servicing your unit, make sure unit is turned off and unplugged. Failure to do so could result in damage to your unit and serious bodily injury.**

To replace ULPA filters, ensure the unit is turned off and unplugged. Refer to warnings and cautions above. Remove the screws on top panel to remove top panel. To replace ULPA filter model number 2100-29, loosen the screws marked with red arrows. Slide the used filter out and replace with new filter (Figure 1).

Repeat steps above to replace ULPA filter model number 1681-10 (Figure 2).
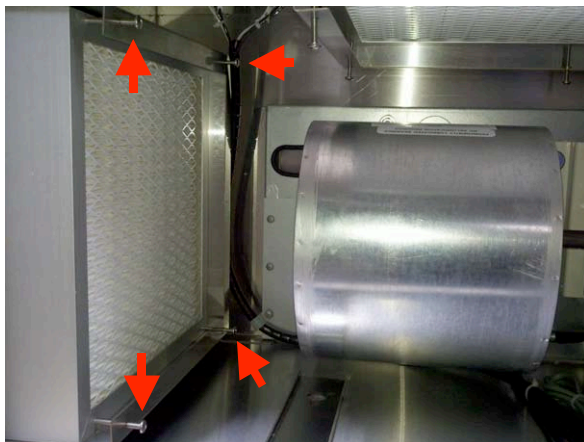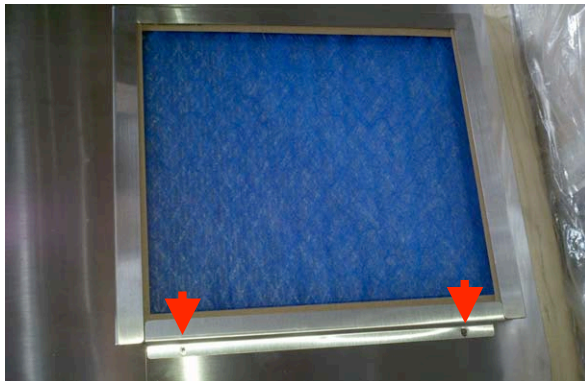

(Figure 1)
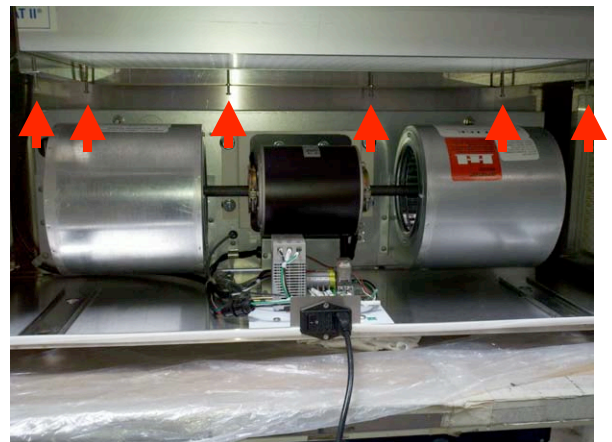
(Figure 2)

(Figure 3)

(Figure 4)

To replace prefilter models 9202-50 and/or 1681-04A, simply unfasten the retaining brackets by removing its screws. Slide the prefilter out and replace with new (Figure 3 and 4).

8.0 Warranty

Products Manufactured by Terra: Terra Universal, Inc., warrants products that it manufactures to be free from defects for a period of 12 months for parts and 90 days for labor, commencing from the date of shipment. Terra's sole responsibility is to repair or replace, at its option, any part of the product that proves defective or malfunctioning during this time limit. In some cases, components incorporated in Terra Universal products are covered by additional warranties from component manufacturers; obtain specific information from Terra sales representatives. This warranty is void if the equipment is abused or modified by the customer, is operated outside Terra's operating instructions or specifications, or is used in any application other than that for which it is specified. This warranty does not include routine maintenance or service procedures, breakage of quartz baths after 60 days, shipping damage, nor damage from misuse, intentional or unintentional abuse, neglect, natural disasters, or acts of God.

Products Manufactured by Others: Terra Universal, Inc., warrants that, to the best of its ability, Terra's representations of products that are manufactured by others reflect the manufacturer's representations, subject to change without notice. Sole warranty for these products is the original manufacturer's warranty that is passed forward to the purchaser and constitutes the customer's sole remedy for these products. Detailed warranties for distributed products are available through Terra sales representatives.

Freight Shortage or Damage: Upon receipt of any equipment from Terra Universal, Inc., customer shall immediately unpack and inspect for damage or shortage. The customer shall not accept a damaged package or a short shipment until the carrier makes a "damage or shortage" notation on both the carrier's and customer's copy of the freight bill or delivery receipt. Service title passes when the shipment is loaded, so customer is responsible for filing and collecting a freight claim. Any replacement products must be ordered and paid for separately. For Terra's "Policy and Procedures for Returning Goods," see Terra's Internet site: www.TerraUniversal.com.

Generally, customers can improve the chance of collecting on a freight claim by following these procedures: 1) formally requesting that the carrier inspect the shipment immediately upon suspecting damage or shortage to verify condition; 2) notifying the carrier upon discovery of concealed damage and requesting an inspection within 15 days of receipt, both in person or phone and following up via mail; 3) keeping the shipment as intact as possible, including retaining original packaging materials and keeping the product as close to the original receiving location as possible; 4) holding salvage for disposition by the carrier.

All Claims: Terra Universal expressly disclaims all other warranties, expressed or implied or implied by statute, including the warranties of merchantability or fitness for intended use. Terra Universal is not responsible for consequential or incidental damages arising out of the purchase or use of the products supplied by Terra Universal. Terra Universal is not liable for damage to facilities, other equipment, products, property or personnel of others, or of their agents, suppliers, or affiliated parties, which is caused or alleged to have been caused by products supplied by Terra Universal. In any event or series of events, Terra Universal's total liability for any and all damages whatsoever is limited to the lesser of the actual damages or the original invoice cost of the items alleged to have caused the damage. The customer's sole and exclusive remedy for any cause of action whatsoever is repair or replacement of the non-conforming products or refund of the actual purchase price, at the sole option of Terra Universal. All claims must be made in writing within 90 days of the date the product was shipped. Any claims not made within this time limit shall be deemed waived by the customer. Terra Universal is not responsible for any additional costs of repair caused by poor packaging or in-shipment damage during return.

Warranty Returns: All warranty returns must be authorized in advance by Terra Universal and approved under an RMA. Unless approved in advance for good reason, all returns must be in original condition, including all manuals, and must be packaged in original packaging materials. All returned goods are to be shipped to Terra Universal, freight prepaid at customer's expense. See Terra's "Policy and Procedure for Returned Goods."

Thank you for ordering from
Terra Universal!

D38

Microwave Motion Detector with Human Presence Radar™ (HPR™) Technology

Section 1

General Description

Until now, conventional microwave motion detectors for the automatic door industry have been able to reliably detect motion only down to a few inches per second.

Using MS SEDCO's patented Human Presence Radar™ (HPR™) technology, the D38 detects extremely small motion, down to less than a fraction of an inch per second. Once a person moving 2" per second or more triggers the D38, HPR™ is enabled, allowing for continuous detection of all people, even extremely slow moving persons.

Along with *HPR™ Technology*, the D38 provides:
- Microprocessor controlled detection, for state-of-the-art performance and reliability
- Unidirectional and bidirectional detection in one unit
- Narrow and wide patterns, and variable elevation, in one unit
- Two (2) interchangeable planar antenna are provided—wide and narrow
- Easy installation and set-up (no need for proprietary external devices)
- A vandal resistant design
- A UV stabilized enclosure
- Service from the MS SEDCO Team (where customer service has always been our #1 priority)

Section 2

Installation

Mounting & Wiring

The D38 is a flush mount sensor that easily mounts to the header of any automatic door. The typical mounting height is 7'6" (2.3m) with a maximum height of 15' (4.5m). The D38 can be mounted using the optional D38-BDB or D38-MP mounting brackets (see page 6) when more flexible mounting is required. Mounting screws are included with the D38. Operating voltage is 12V to 24V AC or DC ± 10%. AC power is typically supplied through a 12V or 24V transformer. Power consumed by the unit is 3.5 watts maximum. *NOTE: Transformer is not included.*

A screwdriver and drill are the only tools needed to install the D38. Using the screwdriver, gently pry the cover away from the back plate. This is done by inserting the flat head of the screwdriver into the lock at the top of the vandal-resistant cover. The model DRC rain cover may be necessary if no awning is available to protect the unit from direct rainfall.

Using the mounting template provided, locate the preferred mounting position (typically centered above the clear opening of the door) and drill the screw holes. Then drill the wire hole within the shaded area of the mounting template. Finally, install both screws part way only (screws provided). Complete the next section before actually mounting unit.

Remove (unplug) the terminal connector and connect the wires according to the wiring diagram. Once wired, replace the terminal connector and continue to wire the sensor to the operator as usual. NOTE: Allow for a small drip loop behind the unit to insure that water will not enter through wiring hole. Once all secondary wiring is completed, mount the D38 to the header as follows:
1) Place the screw on the right side into the slot on the right side of the sensor.
2) Slide the sensor up so that the screw on the left side slips into the wide part of the mounting keyhole on the left side of the sensor.
3) Slide the sensor down so that the screw on the left side slides into the narrow part of the hole on the sensor.
4) Once the screws are tightened, ensure that the sensor is tight by trying to move it up and down.

The sensor should fit snug to the mounting surface. If not, check for wires pinched under the edge of the back plate.

⚠ **NOTE:** Terminal Wiring is dependent on selection of "Failsafe On" or "Failsafe Off" (Dip Switch 4).

BEFORE APPLYING POWER, MAKE THE FOLLOWING ADJUSTMENTS:

In order to manipulate the detection zone, the following adjustments are available:
1. **Wide or Narrow Pattern**. To adjust pattern, simply install the appropriate planar antenna (see page 5 for diagram).
2. **Elevation Angle** (antenna tilt angle). To adjust the Elevation Angle, simply tilt the antenna up or down (21° to 45°, each click represents a 3° change).
3. **Potentiometers**. Two potentiometers are provided to further adjust the D38. To adjust the pots, simply turn clockwise to maximum, counterclockwise to minimum.

Range	Allows adjustment of pattern size
Relay Hold Time	Allows adjustment of time delay from 1 1/2 to 5 seconds

4. **Indicator LEDs (on)**. LEDs are provided for ease of installation, walk testing and operation.

Green LED	Ready Mode
Yellow LED #1	Standard Motion Active (detecting motion 2" per second or faster)
Yellow LED #2	Human Presence Radar™ (HPR™) Active (detecting motion to less than 1/2" per second)
Red LED	Relay Active—Motion Sensed

5. **Four Position Dip Switch**. These dip switches set the internal threshold limits used by the software.

Switch 1 Directionality	ON Unidirectional (detects motion toward unit)
	OFF Bidirectional (detects motion toward and away from unit)
Switch 2 Standard Motion Sensitivity	ON High (more sensitive)
	OFF Low (less sensitive)
Switch 3 HPR™ Sensitivity	ON High (more sensitive)
	OFF Low (less sensitive)
Switch 4 Failsafe Mode	ON Door CLOSES in event of power failure (Failsafe OFF)
	OFF Door OPENS in event of power failure (Failsafe ON)

Once alignment is complete, apply power to the D38.

⚠ **CAUTION:** DO NOT APPLY 120V AC primary power to power supply until all secondary wiring is complete.

Once the unit is powered up, the LEDs will flash while the unit is running a self-test. During the self-test, the door may remain open for a short period of time. The self-test is complete when the red LED stops flashing and the green LED illuminates and remains on. The red LED (on) is an indication that the relay has closed and activated the automatic door. The red indicator LED should be used to help set the pattern for the desired coverage.

Walk test the unit to ensure that the pattern extends to the edge of the door but does not see the door. If the unit sees the door, it will cycle continuously. Adjust the elevation angle and/or range, wait for the door to close and walk test again. When the pattern adjustment and final walk test are finished, replace the vandal resistant cover by inserting the pins in the bottom of the cover into

the back plate and rotating the cover upward until it snaps into place. Installation is complete.

Whenever the D38 settings are changed, exit the pattern and allow the door to close, then walk test again.

NOTE: Each sensor is factory tuned to one of three frequencies centered around 24.125 GHz so that two or more doors in the same vicinity can be operated without interference.

Section 3
System Inspection and Instructions

*****EXTREMELY IMPORTANT*****
After final set-up, test unit(s) completely to ensure that proper coverage has been achieved (width, depth and location of the pattern must be tested).

After the installation and operational check of the system:
1. Place the proper labels on the door per ANSI/BHMA A156.10, A156.19 & BS 7036.
2. Instruct the owner of the door system operation and how to test it. This should be checked on a daily basis.
3. Instruct the owner on what to do if the door or any of its components become damaged.
4. Strongly recommend to the owner that the complete entry be inspected twice a year as part of the service agreement.

Section 4
Technical Data

Model................................ D38
Frequency.........................24.125 GHz ± 50 MHz (K-band)
Detection Method.............Doppler Shift Microwave
Detection Pattern............. Adjustable, Wide or Narrow
Detection Angle................ Adjustable, 21° to 45° in 3° increments
Directionality....................Switch Selectable, Unidirectional or Bidirectional
Range................................Adjustable (Range Pot.)
Max. Mounting Height......15 ft. (4.5m)
Power................................12 to 24V AC or DC ± 10%
Power Consumption......... 3.5 W Maximum
Output Contact................. Form C, Rated at 1 Amp
Output Power.................... 5 mW Typical, 2 mW Minimum
Relay Contact Ratings......0.5A: 50V AC—1A: 24V DC
Hold Time.........................Adjustable, 1 1/2 to 5 Seconds
Mounting..........................Flush Mounted

D38

**Microwave Motion Detector with
Human Presence Radar™ (HPR™) Technology**

HPR
HUMAN PRESENCE RADAR™

INSTALLATION INSTRUCTIONS

Temperature..................... -22°F to 158°F
(-30°C to 70°C)
Color................................. Flat Black
Enclosure.......................... UV Stabilized, ABS Plastic,
Ready To Paint
Weight.............................. <1 lb. (< 0.454kg)
Size (w/Cover On)............. 5 1/4"W x 4"H x 2 7/8"D
13.3cmW x 10.2cmH x 7.3cmD

Section 5

Approvals

ANSI Standard (ANSI/BHMA A156.10-1999)
FCC Certified—FCC Rules, Part 15
Industry Canada—Section RSS210
U.S. Patent No. 5,903,217

This product is guaranteed to operate to the specifications listed if it is installed in accordance with these installation instructions.

Section 6

Warranty

MS SEDCO guarantees this product to be free from manufacturing defects for 3 years from date of installation. Unless MS SEDCO is notified of the date of installation, the warranty will be in effect for 3 years from the date of shipment from our factory. If, during the first 3 years, our motion detector or support device fails to operate and has not been tampered with our abused, the unit can be returned prepaid to factory and it will be repaired free of charge. After 3 years, the unit will be repaired for a nominal service charge. **This limited warranty is in lieu of all other warranties expressed or implied, including any implied warranty of merchantability, and no representative or person is authorized to assume for MS SEDCO any other liability in connection with the sale of our products. All warranties are limited to the duration of this written warranty. In no event shall MS SEDCO be liable for any special, incidental, consequential or other damages arising from any claimed breach of warranty as to its products or services.**

Questions? Call us toll-free at 1-800-842-2545 or visit us online at www.mssedco.com.

Section 7

Troubleshooting

PROBLEM: Door will not open when activated.
Does red LED come on when sensor is approached?

NO	YES
Turn sensitivity adjustment to maximum.	Connect one lead of OHM meter to the N.O. terminal of sensor and the other lead to the COM terminal of the sensor. Be sure all the wires are disconnected from those 2 terminals. (Set meter to 1K).

Does red LED come on when sensor is approached?

YES	NO
Adjust sensor settings. If problem persists, replace sensor.	Verify adequate power supply to sensor. Repair as necessary.

If problem persists, please call us at 1-800-842-2545.

Does circuit open and close when sensor is activated?

YES	NO
Ensure that wiring is accurate between sensor and activate input. Be sure to check door on/off switch for proper operation.	Replace sensor.

If problem persists, please call us at 1-800-842-2545.

PROBLEM: Door will not close.
Does red LED at sensor come on an go out when you enter and exit the detection field?

NO	YES
Test input power to sensor with voltmeter.	Disconnect the wires from the N.O. and COM terminals of the motion sensor.

Is voltage sufficient (12V to 24V AC or DC ± 10%?

YES	NO
Replace sensor.	Replace power supply and/or related wiring.

If problem persists, please call us at 1-800-842-2545.

Did the door close?

YES	NO
Replace sensor.	Problem is NOT motion sensor. Check door on/off switch and related wiring. Refer to the door manual.

If problem persists, please call us at 1-800-842-2545.

MS SEDCO
SENSORS & SWITCHES

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PROBLEM: Door constantly recycles (opens and closes).
First, determine whether or not the sensor is causing the recycling. Ensure that there is nothing moving in the field of detection and watch the sensors' red LED as the door recycles. Does the red LED come on as door recycles?

NO	YES
Problem is NOT motion sensor. Refer to the door manual.	Reduce the motion sensor range to minimum.

If problem persists, please call us at 1-800-842-2545.

Does recycling stop?

YES	NO
Slowly increase range while continually walk testing the door. If proper operation cannot be achieved, read NO section to the right.	Increase the elevation angle of the antenna to shift pattern out from the face of the door. Once done, adjust the sensitivity for proper detection field.

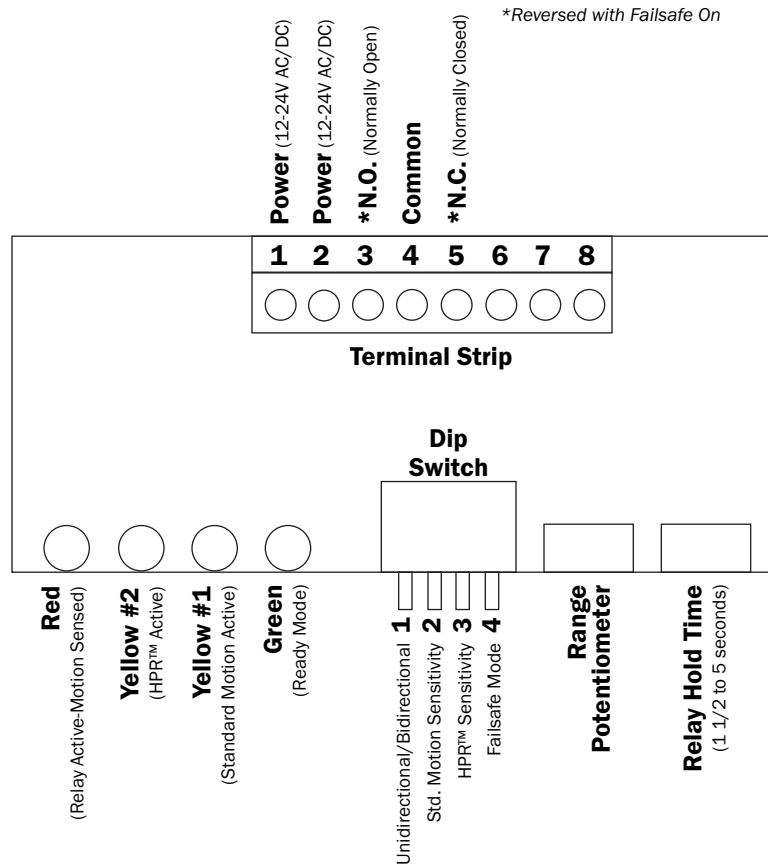*If problem persists, please call us at 1-800-842-2545.*

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D38
**Microwave Motion Detector with
Human Presence Radar™ (HPR™) Technology**

HPR
HUMAN PRESENCE RADAR™

INSTALLATION INSTRUCTIONS

D38 WIRING DIAGRAM

*Reversed with Failsafe On

Terminal Strip labels (positions 1–8):

1	2	3	4	5	6	7	8

- Power (12-24V AC/DC) — 1
- Power (12-24V AC/DC) — 2
- *N.O. (Normally Open) — 3
- Common — 4
- *N.C. (Normally Closed) — 5

Terminal Strip

Dip Switch

LED / Indicator labels:
- **Red** (Relay Active-Motion Sensed)
- **Yellow #2** (HPR™ Active)
- **Yellow #1** (Standard Motion Active)
- **Green** (Ready Mode)

Dip Switch settings:
- Unidirectional/Bidirectional **1**
- Std. Motion Sensitivity **2**
- HPR™ Sensitivity **3**
- Failsafe Mode **4**

Range Potentiometer

Relay Hold Time (1 1/2 to 5 seconds)

Snap-Ring

Square Actually!
Plastic retainer—fits
over antenna & holds
in place.
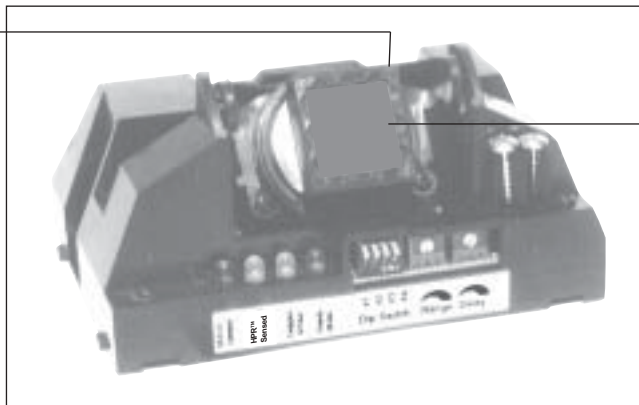
Wide Pattern
Wide planar antenna
shipped in place.

Narrow Pattern
Remove snap-ring,
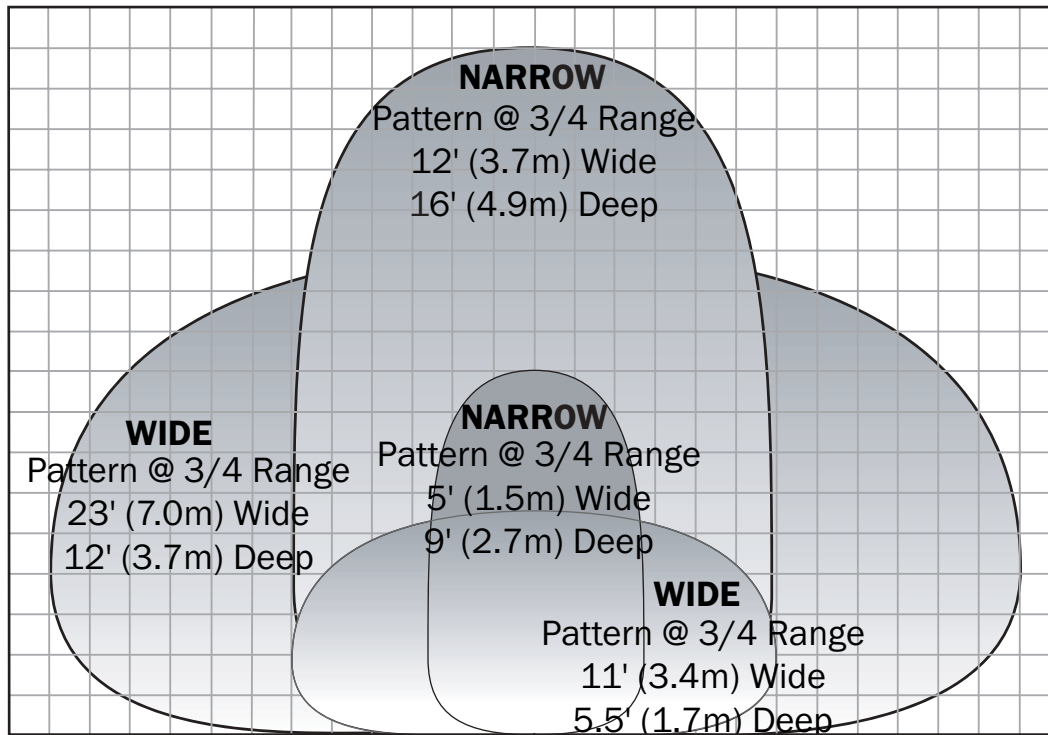replace wide with
narrow planar
antenna and replace
snap-ring.

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D38 PATTERN DIAGRAM

NARROW
Pattern @ 3/4 Range
12' (3.7m) Wide
16' (4.9m) Deep

WIDE
Pattern @ 3/4 Range
23' (7.0m) Wide
12' (3.7m) Deep

NARROW
Pattern @ 3/4 Range
5' (1.5m) Wide
9' (2.7m) Deep

WIDE
Pattern @ 3/4 Range
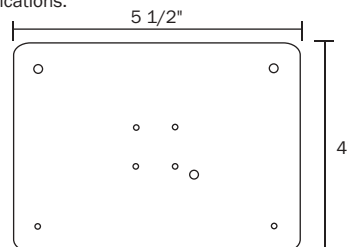11' (3.4m) Wide
5.5' (1.7m) Deep

NOTE: The smaller detection patterns shown are from a D38 mounted 7'6" above the finished floor with an elevation angle of 27°.
The larger detection patterns shown are from a D38 mounted 15' above the finished floor with an elevation angle of 27°.
All patterns shown are approximate and can vary slightly. Walk test the unit to assure the pattern desired.

D38-BDB BACKPLATE/BRACKET AND D38-MP MOUNTING PLATE

The D38-BDB is an optional bracket for the D38 sensor. It allows universal aim adjustment and adapts the D38 for unique mounting requirements.

The D38-MP is an optional mounting plate that adapts the D38 sensor for mounting to a 1 3/4" door header. It can also be field prepped for a variety of unique mounting applications.

5 1/2"

4"

(Drawing Not To Scale)

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Product Name
SafePath™ D38
Microwave Motion Sensor featuring Human Presence Radar™ (HPR™)

Manufacturer
MS SEDCO
8701 Castle Park Drive
Indianapolis, IN 46256
Phone: (800) 842-2545
www.mssedco.com

Product Description
BASIC USE
The SafePath™ D38 with patented Human Presence Radar™ (HPR™) is the latest advancement in microwave motion detection for automatic doors. It is the only microwave sensor that provides protection for a person who enters the door activation zone and then slows to an extremely slow pace or stops. The D38 can provide this extra level of protection because HPR allows it to actually detect two separate rates of motion simultaneously.

Human Presence Radar™ (HPR™) sensors provide more safety than any other standalone microwave motion sensor.

Like other conventional microwave sensors, for the D38 to activate an automatic door it utilizes Doppler shift radar to detect movements of at least 2" per second. However, once the door has been activated the

D38's second level of detection — Human Presence Radar™ — is enabled. Now motion down to 1/4" per second can be detected. This means with HPR™ enabled, persons virtually standing still will continue to be detected anywhere in the detection zone.

Since conventional Doppler shift radar must initially activate the door before enabling Human Presence Radar™ there is no additional chance for false activation of the door because HPR™ alone cannot activate the door.

Human Presence Radar™ gives slow moving, elderly or disabled persons the confidence that once they have been initially detected, they can safely approach an automatic door at any speed without the door closing prematurely.

Technical Data
- Human Presence Radar™ (HPR™) Provides Additional Level Of Motion Detection After Initial Door Activation
- Unidirectional & Bidirectional, Narrow & Wide Patterns, and Variable Elevation, In One Unit
- Two Planar Antennas Included
- Can Be Mounted Up To 15 Feet Above Floor
- Easy To Install and Set-Up Without Proprietary External Devices
- Easy Sensitivity and Time Delay Adjustments
- UV Stabilized ABS Plastic Enclosure With Easy Access To Connectors and LEDs
- Safety Beams or Safety Sensors May Be Required. Consult ANSI A156.10
- Rain Cover Available (DRC)

SPECIFICATIONS

|	
Model	SafePath D38
Frequency	24.125 GHz ± 50 MHz (K-Band)
Detection Method	
Initial Detection:	Doppler Shift Radar
Additional Detection:	Human Presence Radar™ (HPR™)
Detection Pattern	Selectable, wide or narrow
Detection Angle	Adjustable, 21° to 45° in 3° increments
Directionality	Switch selectable, Unidirectional or Bidirectional
Range	Adjustable (range pot.)
Max. Mounting Height	15' (4.5m)
Power	12V to 24V AC or DC ± 10%
Power Consumption	3.5W maximum
Output Contact	Form C, rated at 1 amp
Output Power	5mW typical, 2mW minimum
Hold Time	Adjustable, 1.5 to 5 seconds
Mounting	Flush Mounted
Temperature	-22°F to 158°F (-30°C to 70°C)
Color	Flat Black
Weight	<1 lb. (0.454kg)
Size	5 1/4"W x 4"H x 2 7/8"D 13.3cm W x 10.2cm H x 7.3cm D
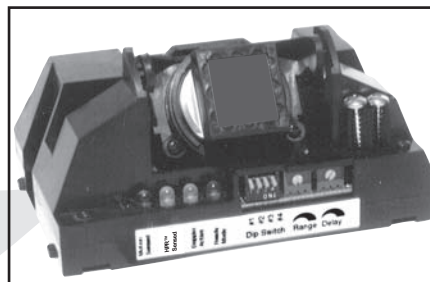
22006

APPLICABLE STANDARDS
American National Standards Institute (ANSI) - Building Hardware Manufacturer's Association (BHMA) - ANSI/BHMA A156.10.

APPROVALS
FCC, CE, IC
US Patent No. 5,903,217

Installation
SETUP AND ADJUSTMENT
The D38 installs easily. The terminal block is directly accessible from the front. The LEDs are clearly visible. The planar antennas are interchangeable for wide and narrow patterns, and may be tilted to adjust elevation. A range potentiometer further adjusts the pattern, and a second potentiometer adjusts the time delay from 1.5 to 5.0 seconds. A four position dip switch allows the installer to select unidirectional or bidirectional operation, failsafe mode and to adjust standard motion and Human Presence Radar™ (HPR™) sensitivity.
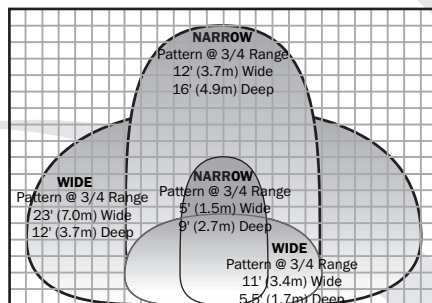
The D38-BDB Bracket is an optional backplate and bracket which allows the installer to elevate and swivel the D38 for more universal configurations.

D38-BDB

The D38-MP is an optional mounting plate that will adapt the D38 for mounting to a 1 3/4" door header.

COVERAGE PATTERN

NARROW
Pattern @ 3/4 Range
12' (3.7m) Wide
16' (4.9m) Deep

WIDE
Pattern @ 3/4 Range
23' (7.0m) Wide
12' (3.7m) Deep

NARROW
Pattern @ 3/4 Range
5' (1.5m) Wide
9' (2.7m) Deep

WIDE
Pattern @ 3/4 Range
11' (3.4m) Wide
5.5' (1.7m) Deep

STANDARD MOUNT
Mounted 7'6" from finished floor with an elevation angle of 27°:
Wide Pattern @ 3/4 Range
11' (3.4m) Wide
5.5' (1.7m) Deep
Narrow Pattern @ 3/4 Range
5' (1.5m) Wide
9' (2.7m) Deep

HIGH-MOUNT
Mounted 15' from finished floor with an elevation angle of 27°:
Wide Pattern @ 3/4 Range
23' (7.0m) Wide
12' (3.7m) Deep
Narrow Pattern @ 3/4 Range
12' (3.7m) Wide
16' (4.9m) Deep

(These detection patterns are approximate and will vary slightly. Walk-test the unit to assure the pattern desired.)

Availability & Cost
AVAILABILITY
Available internationally from manufacturer's authorized distributors; contact MS SEDCO for the location of nearest distributor.

COST
Cost information on MS SEDCO products is available from the manufacturer's authorized distributors.

Warranty
A three year warranty is available from the manufacturer covering defects in materials and workmanship. Contact MS SEDCO for details.

Maintenance
MS SEDCO recommends that all maintenance and adjustments be performed by an AAADM Certified Technician.

Technical Services
MS SEDCO's staff of factory trained sales and service personnel offer design assistance and technical support. Local distributors are also available to assist in selecting appropriate devices for specific uses and to provide onsite installation.

DIMENSIONS

4"
5 1/4"
4"
2 7/8"

22006