



# METAL DEFENDER

AFFORDABLE PROFESSIONAL SECURITY

## MD-1 USER MANUAL



### Contact

772 Twin Rail Drive  
Minooka, IL 60447

Phone: (815) 467-6464

Email: [support@metaldefender.com](mailto:support@metaldefender.com)

Website: [www.metaldefender.com](http://www.metaldefender.com)

# MEDICAL SAFETY

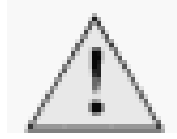
Metal Defender makes every effort to ensure its products are safe for use. Extensive research by Metal Defender has produced no information which would indicate that its products have any adverse effects on medical implants, pregnancy, recording media or magnetic strips. Metal Defender makes every effort to cooperate with medical device manufacturers and to communicate with agencies such as the United States Food and Drug Administration and Health Canada as a means of assuring product safety. The electromagnetic fields produced by Metal Defender products are similar to those encountered in the daily environment and meet U. S. and International standards for electromagnetic emissions.

Metal Defender recognizes that certain medical devices may have additional requirements which may require special care. Any recommendations or directives issued by personal physicians or medical device manufacturers should be followed. If, for any reason, (e.g. doctors orders, etc.), a patron objects to being scanned with a metal detector, it is recommended that alternative procedures be used.

The following should be considered when developing a security checkpoint screening plan.

- **Traffic Flow** - Traffic flow should remain consistent and encourage unrestricted traffic flow as a means of minimizing the time a person remains within the archway of a walk- through metal detector.
- **Alternative Screening** - Alternative screening methods such as scanning with a handheld metal detector, hand searching or denial of access should be clearly defined in checkpoint screening procedures as approved alternatives to screening with the walk- through metal detector.
- **Personnel Training** - Security screening personnel should be instructed in the care of persons with special medical needs and use of alternative screening methods that meet the requirements of medical practitioners or medical device manufacturers

## PLEASE READ THE FOLLOWING INSTRUCTION CAREFULLY BEFORE OPERATON



Regarding to how to how to use the machine correctly and safely, please attention to the following instructions. make sure you have read it before operation.

1. It's available for both indoor and outdoor use, please use canopy to protect it against rain.
2. Choose the smooth and stable installation place, don't touch the detector during security checking to avoid false alarm.
3. Make sure there's no big metal object or strong magnetic field around the detector within 2 meters.
4. Keep the detector far from the power line and communication cable.
5. Detector probe must not install in high temperature or wet circumstance.
6. Do not disassemble the control units except the professional technician.
7. Please wait 1 minute for its self-diagnosing when machine start.
8. We advise to have a power cord on the ceiling, easier to connect to the detector.
9. Follow the user manual and make sure the right wire connection when machine start.

## INTERFERENCE

The interference during the walk through metal detector working,are mainly as follow:

### **Electronic Jamming**

Working frequency for the Walk Through metal detector is 4KHz-8KHz. around the work environment should exclude the electronic products that have the almost similar working frequency such as generator, TV etc.

### **Moving metal objects Interference**

The Walk Through metal detector will be interfered by the moving metal objects, around the work environment should not have turnstile and from vehicle etc. big moving metal objects.

### **Interference Between Products And Products**

During using 2 pieces or more Walk Through metal,should avoid using the same frequency(the work frequency can be seen on the packing box),the minimum distance between two doors should be above 0.5m to avoid the mutual interference for the Walk Through metal detectors.

# Technical Specifications

Metal Defender's MD-1 Walk-through Metal Detector provides pinpoint accuracy and discrimination features. This detector is effective in all environments including but not limited to airports, government buildings, correctional facilities, and sports venues. While being cost effective it also provides the same security that professionals worldwide receive from other brands.

<b>Sensitivity</b>	Single Adjustable Zone with sensitivity levels 0-99
<b>Zone Indications</b>	Single zone
<b>Overhead Control Unit</b>	All Electronics- LED, Alarm light, Control Touch pads-Integrated to eliminate wire exposure
<b>Self Diagnostics</b>	Upon Startup/Reset Unit will Self-Diagnose
<b>Battery Pack (Optional)</b>	8-10 Hours of Backup Battery Charge
<b>Warranty</b>	24-Month standard warranty Limited Parts/Labor
<b>Interior Size</b>	78.74in(H)x27.56in(W)x16in(D)
<b>Exterior Size</b>	86.61in(H)x32.68in(W)x16in(D)
<b>Temperatures</b>	-20C to 60C Operating-20C to 50C Storing
<b>Power</b>	110-230VAC $\pm$ 10%
<b>Weatherproofing</b>	IP55 Water/Dust resistant

## Product Features

- Alarm Display, LED display show the mess of metallic articles
- Built in power supply
- Waterproof for mild outdoor usage

## General Information

### **Regional Sensitivity:**

The maximum sensitivity can detect metal content as small as a paper coin, in self-regulation between 0-99 sensitivity detection requirements may need to be adjusted. Be sure to determine the items you are looking for beforehand and remove keys, jewelry, belt buckles, and steel toe boots to prevent false alarms. Also make sure that the unit is at least 4 feet from any metal frame door or revolving door.

### **Waterproof:**

Made of PVC synthetic materials, the unit is waterproof for mild outdoor usage.

### **Smart Statistics:**

Intelligent traffic and alarm counting function; can automatically detect the number of passing individuals and the number of alarms that have gone off.

### **Anti-Interference Ability:**

Digital, analog, and left and right balanced technology help in preventing false alarms and false negatives, and greatly improve the anti-jamming capability.

### **Safety Protection:**

Double password protected, allowing only authorized personnel operation and access. Multiple passwords allow for better security parameters. Parameter settings are automatically stored without interrupting power supply protection, both safe and convenient.

### **Electromagnetic Radiation:**

EMC electromagnetic radiation standards; use of weak magnetic field technology, safe for pregnant women, cell phones, film, video tapes and other sound equipment.

### **Installation:**

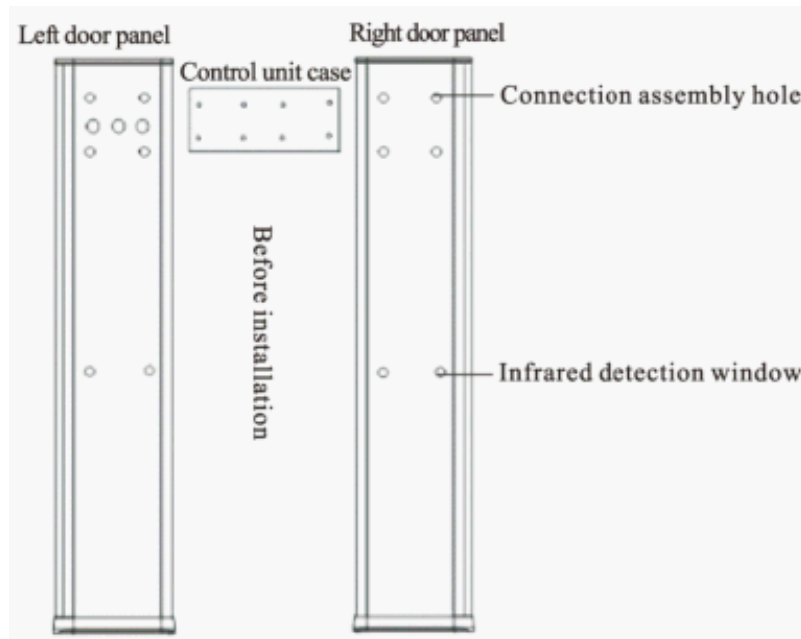
This series metal detector has an integrated design, which allows for easy installation or removal within 10 minutes.

### **Field of Use:**

Airport, schools, concert venues, events, railway stations, docks, entertainment facilities, prisons, courts, government departments, factories, examination room, shopping malls, community channels, security check, and prohibited items inspection areas.

## Installation Instructions

Please read through the following instructions to properly install, program, and adjust the sensitivity of the Metal Defender walk-through metal detector.



1. Open the boxes and take out the 3 main pieces – Left door panel, Right door panel, and control unit. Place all on the Styrofoam in the position below to properly secure the 3 pieces to form the frame of the unit (see diagram below). The LED display on the control unit should be in the upright position facing you. Each probe is identified with an “L” or “R”. Make sure the “L” or “R” inside the control unit matches the corresponding probe.
2. Take the 8 bolts and nuts in the bag and make sure that they are pushed through each screw hole on the probes and than through the holes in the control unit.
3. Once you have the 8 bolts securely in place with the probes and control unit, take the 8 nuts and tighten securely with the included Allan Wrench (you may need a wrench to hold nut in place when tightening)
4. Each leg has 2 sets of plugs, a round connector and a square power supply connector. The Connectors and the Ports are keyed by shape, so they will only go in one way. Carefully lock them into place. This is the Power and communication supply from the CPU to each of the probes/legs. Take care, but be sure to insert fully. (If not inserted properly the LED's will not work). Finally, Plug the DC connector inside the main board to the corresponding leg/probe where the AC plug is attached from outside the leg/probe.
5. Lock the cover of the control unit case with 4 bolts to prevent opening while transporting.
6. Please have 2 people lift the detector vertically so it is secure and standing upright on the bottom feet. Move the detector to where you will want to install it.
7. Plug the AC plug into an electric outlet. Turn the orange power button on. Your unit should light up and sound off one time. If it does, your unit is up and running. You can adjust sensitivity for the entire unit.

# Debugging

## TURN ON

After finishing cable connection, press the orange button.

## ENTER IN TO SETTING INTERFACE

Press "ENTER" for 3 seconds so as to enter in to setting interface. the initial password is 1234;

Press ENTER key on the power-on screen to enter the password;



Power on the screen



Enter the password 1234

Press ENTER key again, enter a new password, press “↑” key to set the value, and press “↓” key to shift the setting.



If you do not set a new password, press "ENTER" to enter the alarm duration setting

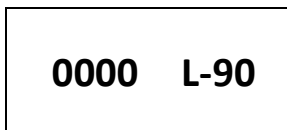


The alarm duration has three levels, d-01,d-02,d-03, and d-01 represents the shortest time: Switch levels by press“↑”or“↓”,

3) Press “ENTER”again to enter the sensitivity setting of 00-99, Set the value by “↑” or “↓”

### **SENSITIVITY SETTING**

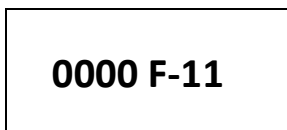
After entering into the setting interface, the the panel shows 0000 L-90. L means sensitivity, 90 means the value of sensitivity, the scope is from 0 to 99. The bigger number the higher sensitivity. Press Upward and Downward key to adjust the sensitivity value, after adjusting the sensitivity value, press ENTER key to save.



Press “↑” or “↓” to adjust the sensitivity value, press “ENTER” to save and return back to the setting interface.

### **FREQUENCY SETTING**

The panel shows 0000 F-11. F means Frequency, 11 means the value of Frequency, the scope is from 1-12.



Press button “↑” or “↓” to adjust the frequency value, after adjusting the sensitivity value, press ENTER key to save & exit.



## FAQ

### **What is the right sensitivity setting for me?**

The best way to determine what sensitivity setting would work best for you is to start on the lowest sensitivity setting 70 and find an article of metal that you wish to pick up. Walk through with the object and increase gradually until the detector picks up the metal. Start with a smaller piece of metal you wish to detect and work from there. If set for smaller traces of metal, the unit will alarm for larger pieces too. (The unit is defaulted at a 90 sensitivity).

### **Examples of minimum sensitivities settings and what will set unit off:**

240 – Paper clip, 210 – Coin cell batteries, 200 – Ring, Zippers, Buttons  
180 – Box cutter, 180 – Gun / Knife, 150 – Cell Phone, 140 – Belt Buckles, Set of Keys

### **I set up my unit, but it will not sound when I walk through with metal?**

Please make sure that the internal AC plug is plugged into the panel where the internal power source is plugged in. Also, please make sure that the correct serial ports inside the head unit are securely fastened in the proper locations. Last, replace the buzzer.

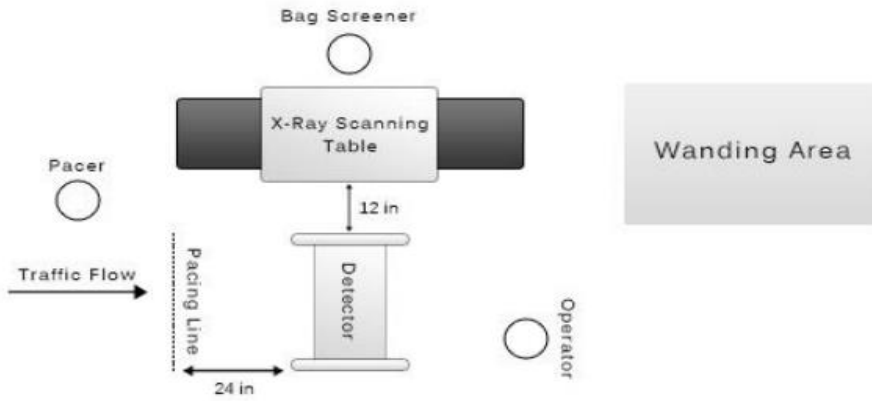
### **There seems to be a lot of alarm detection occurring, more than we want or expected. Why is this?**

Before implementing a metal detector into your security, one must have a plan as to how the equipment is going to best work for them. The best way is to consult who is going to be monitoring the unit and what is the purpose of the unit. For example, if you are looking to catch people stealing small computer parts in their pockets, you are going to need a high sensitivity to detect them. One must have a plan as to which items are needed to be put aside before walking through. If you are not sure, or would like a product specialist to assist creating a plan, feel free to contact us at (815) 467-6464.

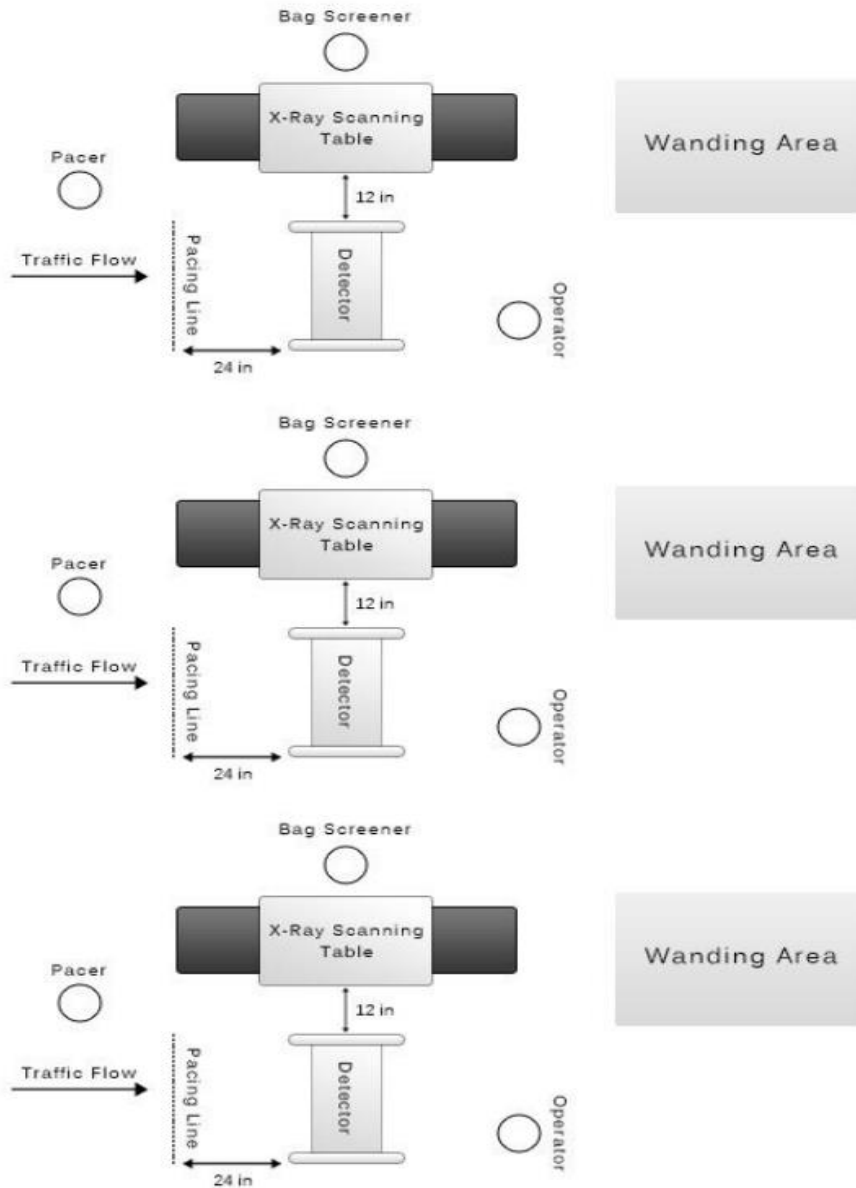
### **The passerby units are not adjusting or are continuously increasing. What should I do?**

The black circular discs on the inside of the panels are the infrared sensors. These pick up when a person walks through the unit. If the unit is not picking up the passerbys, the sensors may have fingerprints or dirt on them. With a cloth towel with rubbing alcohol or window cleaner, rub around the sensor to clean. Also, please check and make sure that the cables are securely fastened to the metal detector leg panels and PC board. If this connection is loose, the unit may not work.

## SUGGESTED SINGLE LANE CONFIGURATION



## SUGGESTED MULTI-LANE CONFIGURAT



# BRIEF MAINTENANCE

## 1. Can't Start The Machine

- 1) Check whether power sockets properly.
- 2) Check whether the power switch is on.
- 3) Check the fuse blew out (Only for Walk Through model).

## 2. Can't Account Passengers

- 1) Don't work in the strong sunlight as it use infrared sensor.
- 2) Check the left and right infrared sensor probe whether in parallel.

## 3. Alarm Without Metal

- 1) First, exclude all the metal in ourself and go through the detector. Find out which zones alarm and low down the zone sensitivity accordingly until it is not alarm.
- 2) Check whether have interference nearby such as big movable machine, high-power equipment.
- 3) Check whether there are similar products nearby, if so change the frequency(Original frequency show on the package carton box).
- 4) Make sure no big wind and smooth around installation place.

## 4. With Metal But No Alarm

- 1) Follow the user manual and increase the zone sensitivity and total sensitivity.
- 2) The factory default setting can detect a coin diameter 25mm. Make sure the metal size is bigger,if not adjust the sensitivity accordingly.

## 5.Single Zone No Alarm

Make higher sensitivity then test again.Change the corresponding zone signal collection card if problem is the same in highest sensitivity.

## 6. Unnormal Communications

- 1) Follow the user manual and confirm whether is the problem of left sensor or right sensor.
- 2) When confirmed which door frame have communication problems, pull out its probe and reinsert for several times,then test again. If problem the same, then replace the corresponding signal collection card, main board and wire step by step until confirm the problems.

## 7. Whole Machine Non-inductivity

Check whether the communication is ok, follow above 6 steps.

If communication is ok, replace the mainboard or signal board step by step.

## 8. LCD Screen Problems, LED Bar Graph Not Lighting,Buttons Not Working

- 1) Replace the parts from other Walk Through metal detector to find the failure parts

## 2 YEAR WARRANTY INFORMATION

Metal Defender warrants that each piece of security equipment manufactured by Metal Defender is protected by the following limited parts and labor warranty for a period of 24 (twenty-four) months (the "Warranty"). During this 24-month period Metal Defender will inspect and evaluate all equipment returned to its authorized repair station or factory to determine if the equipment meets Metal Defender's performance specifications. Metal Defender will repair or replace at no charge to the owner all parts determined faulty. This Warranty does not cover batteries nor any and all failures caused by abuse, tampering, theft, failure due to weather, battery acid or other contaminants and equipment repairs made by an unauthorized party.

THIS WARRANTY IS EXPRESSLY IN LIEU OF ALL OTHER WARRANTIES, EXPRESSED OR IMPLIED, INCLUDING THE WARRANTY OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE. THE BUYER ACKNOWLEDGES THAT ANY ORAL STATEMENTS ABOUT THE MERCHANDISE DESCRIBED IN THIS CONTRACT MADE BY SELLERS' REPRESENTATIVES, IF ANY SUCH STATEMENTS WERE MADE, DO NOT CONSTITUTE WARRANTIES, SHALL NOT BE RELIED UPON BY THE BUYER, AND ARE NOT A PART OF THIS CONTRACT FOR SALE. THE ENTIRE CONTRACT IS EMBODIED IN THIS WRITING. THIS WRITING CONSTITUTES THE FINAL EXPRESSION OF THE PARTIES' AGREEMENT AND IS A COMPLETE AND EXCLUSIVE STATEMENT OF THE TERMS OF THIS AGREEMENT.

The parties agree that the Buyers' sole and exclusive remedy against Seller shall be for the repair and replacement of defective parts. The Buyer agrees that no other remedy (including, but not limited to, incidental or consequential damages for lost sales, lost profits, injury to person or property) shall be available to him.



**METAL  
DEFENDER**  
AFFORDABLE PROFESSIONAL SECURITY