RISK P1 Portable Knife Arch

Installation and Operation Manual

For technical support, please call 01722 444 983

Or email support@knife-arch.co.uk

1. Introduction

Thank you for choosing the RISK P1 Knife Arch. The following instructions are for the initial product installation, daily operation and light maintenance of the equipment.

Before installing or using the equipment, the user should read this manual and fully understand its contents.

Users should follow the operation and maintenance instructions to ensure optimum product performance and increase operational life span.

2. Cleaning and Maintenance

The utmost care should be taken when conducting light maintenance of the device such as charging and cleaning.

When charging please note that the charging cable will only fit in one way due to a notch in the design, do not force the cable on or twist in any way.

A damp cloth can be used to clean the detector. Water, chemicals and liquid detergents should not be used under any circumstances to clean the RISK P1. Do not attempt to clean connections for the power supply or brass connections between the panels.

Do not attempt to open the RISK P1. This will void the warranty. And should only be completed by a member of the RISK Support Team.

If at any time, the equipment is malfunctioning you should ensure the device has been tightened up sufficiently and the device is built correctly. If the device continues to malfunction or has sustained any physical damage, you should stop using the device and contact a RISK Metal Detectors support team to assist.

Please contact the RISK Metal Detectors support team on +44 (0) 1722 444 983, or email for any support enquiries.

3. Use & Operation

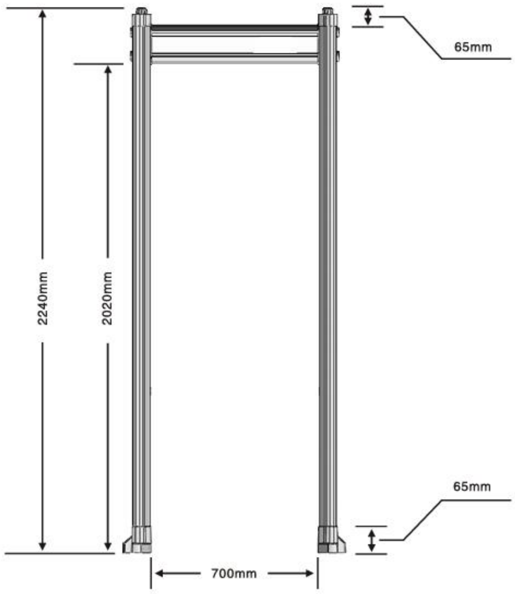
Principle of Operation

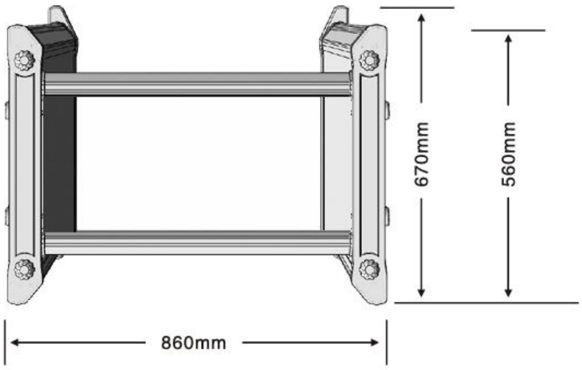
The RISK P1 uses electromagnetic pulses to detect disturbances in the generated field caused by the presence of metal objects. As the metal passes through the device's detection zone, if a significantly large enough disturbance is detected, the device will sound an alarm.

The mass required to set off an alarm is determined by the assigned sensitivity of the detection zone. The higher the sensitivity, the smaller the object that can be detected. A higher sensitivity is not always necessarily the best way of setting up the device.

The correct sensitivity will depend on your search profile and what you are trying to find on the target. The RISK P1 has 24 independent detection zones which can be set to varying sensitivities, refining your searches further.

Specifications





Set up External Dimensions	2240x860x670mm
Set up Internal Dimensions	2020x700x560mm
Deconstructed Dimensions	985x700x570mm
Gross weight	53kg
Number of Detection Zones	24 Zones
Tally Counter	Yes – 4 options for types of tally
Alarms	Adjustable with wide variety of alarms
Operating Frequency	Adjustable range from 0 – 100
Sensitivity Levels	0 – 255
Detection Speed	Rapid High Speed Detection
Battery	12000 mAh 11.1V Battery
Battery Life	Up to 9 Hours depending on usage
Operating Temperature	-20C to +60C
Relative Humidity	99% non-condensing
IPX Rating	IP54 (IP67 with waterproof cover)
Includes Waterproof Cover	Yes
Assembly Time	5 minutes when fully trained
Screen Interface	7" LCD Screen
Primary Material	ABS Polycarbonate Alloy
Modular Design	Yes
Number of Components	8 Pieces
Password Protection	Yes
Pre-Ser Search Profiles	Yes

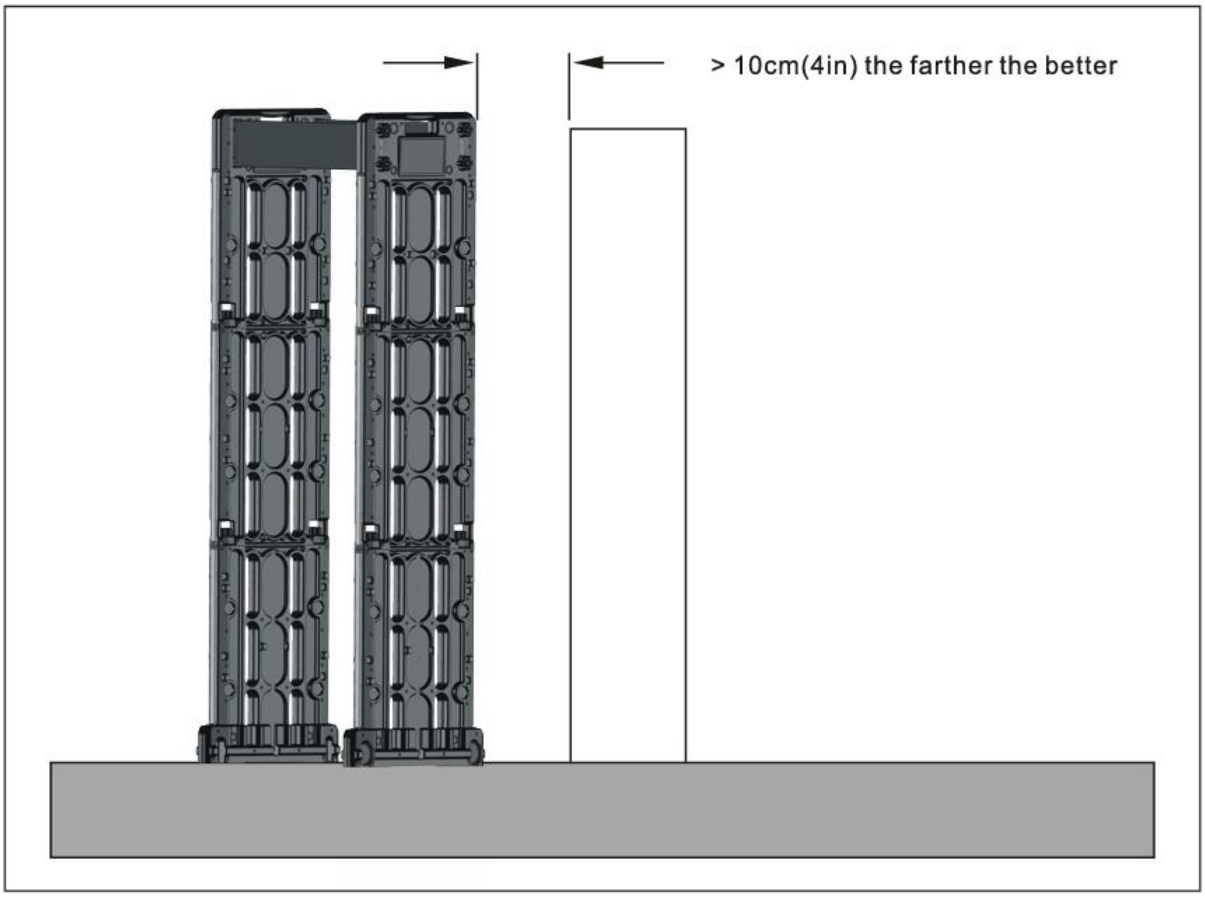
4. Location of Use

While the RISK P1 is a portable metal detector these factors will need consideration when building and installing the device on site. These include fixed metal objects, flat and stable ground, moving metal objects, and electrical interference.

It is very important to minimize any effects produced by these different interference sources to the operation of the knife arch.

Fixed Metal Objects

The distance between the fixed or large metal objects should be at least 4 inches away from the RISK P1 in order to detect large metal objects. This will have little effect on the sensitivity but could make the RISK P1 more susceptible to false alarms.

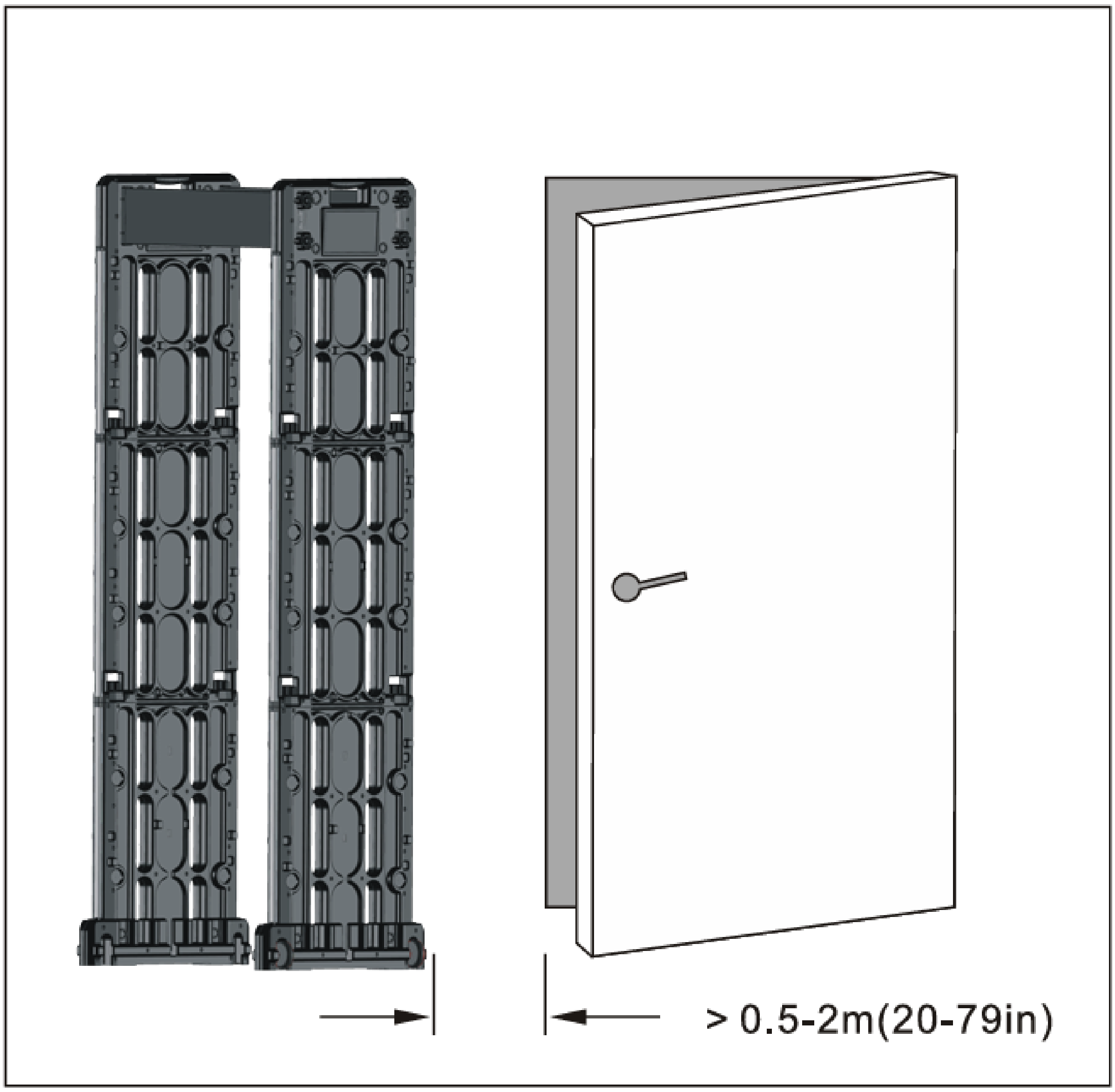


Flat & Stable Ground

Ground should be flat with a solid support to prevent vibration. This is especially important when there is a vibration of the metal structure under the surface as this may cause unnecessary false alarms when people walk through the detector.

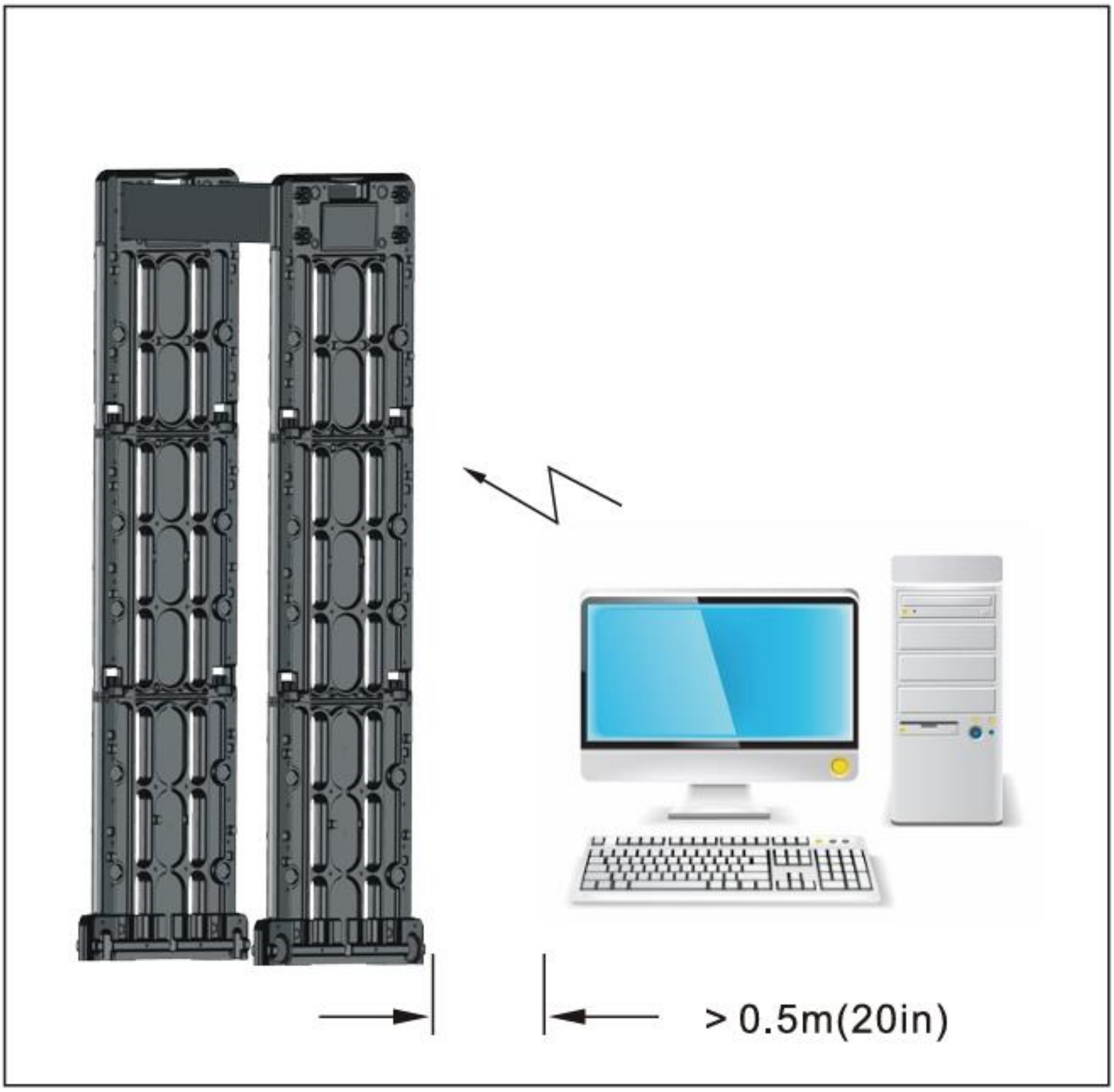
Moving Metal Objects

Moving metal objects outside of the RISK P1 should be kept a distance of 0.5-2m (20-79in) away from the door to avoid false alarms. Based on the size of the metal objects the distance between the metal objects and the RISK P1 may be different.



Radiated Electrical Interference

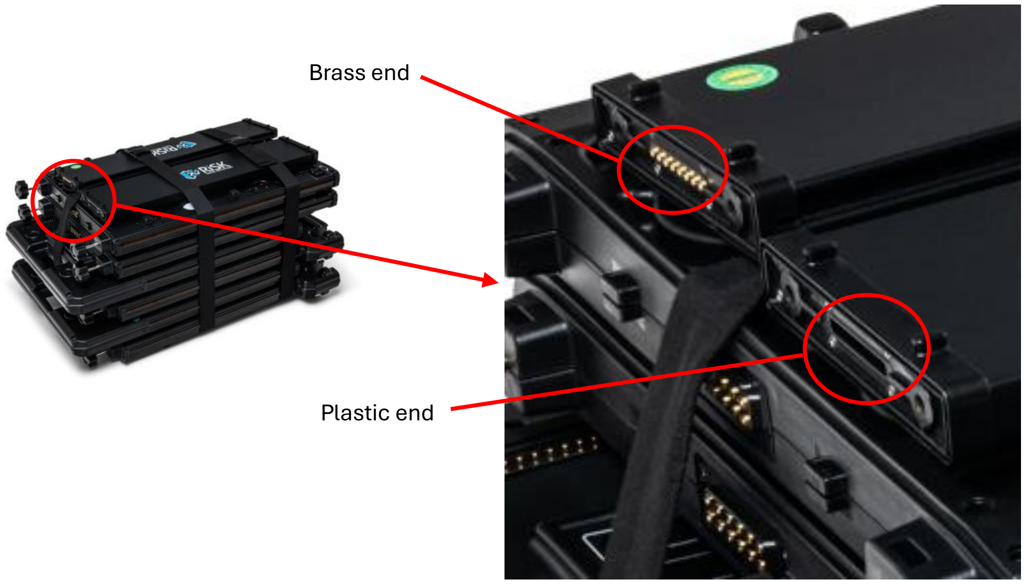
The distance between the electronic interference source and the RISK P1 should be the greatest. The recommended minimum distance should be 0.5-4m. However, the actual distance will depend on the real conditions. For example, you can move the RISK P1 and the interference source to find the best position. Interference can be caused by an electronic control panel, radios and computers, image displays, high-power motors, transformers and strip lighting.



RISK P1 Assembly

2-person (minimum) operation

1. Remove straps and separate out all pieces, take note of the crossbeams, one has brass end pieces whilst the other is only plastic. As seen here:



2. On the main panels you will notice one side has a coloured sticker whilst the other does not.

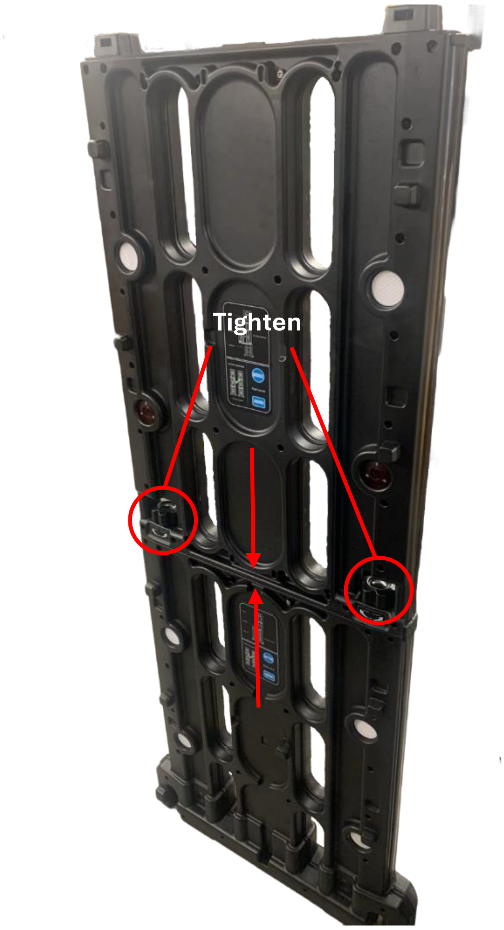
Figure 2. Yellow coloured sticker side (inside)

Figure 1. Non-coloured sticker side (outside)

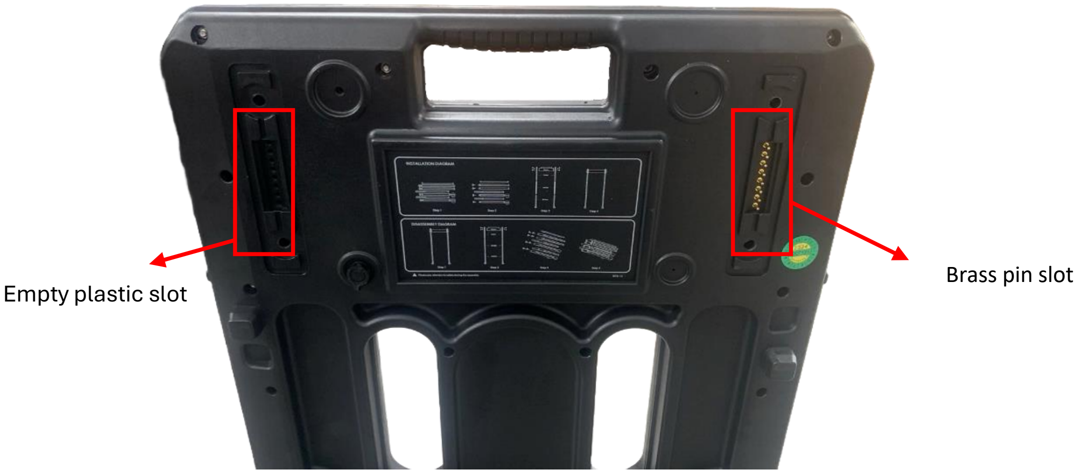
3. Arrange the pieces like the picture shown below. We'll be building both of the bottom sections and then the top section on the ground so it's easier to lift into place.

4. Remove bolts from the bottom and middle pieces and set to one side, we'll need them shortly.

5. Place the middle pieces on top of the bottom pieces and tighten the screws until hand tight, this creates a good connection between both pieces. Do this for both sides.



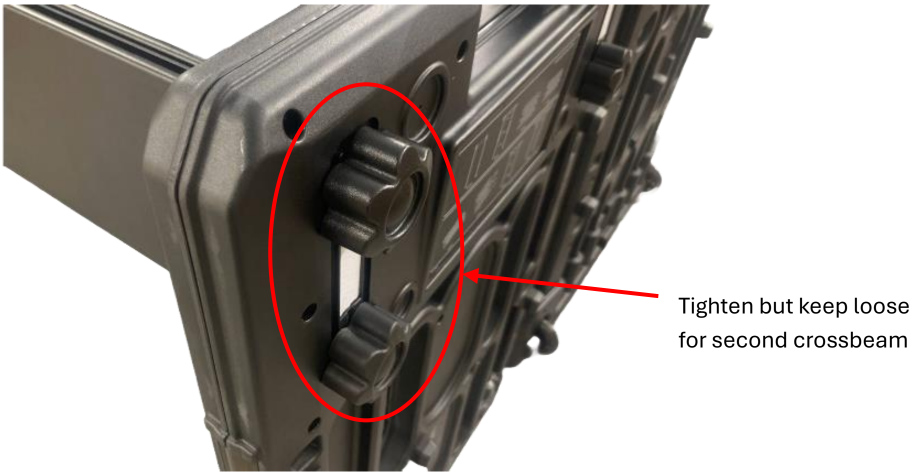
6. Now we will construct the top section. You can see in the top panels that there are two different slots for the crossbeams, one will have brass pins and the other will just be plastic.



7. Place and screw in the brass ended crossbeam to the brass pin slot on one side of the top piece, these screws should be hand tight.

IMPORTANT: The RISK logo must be facing outwards from the device and be the correct orientation.

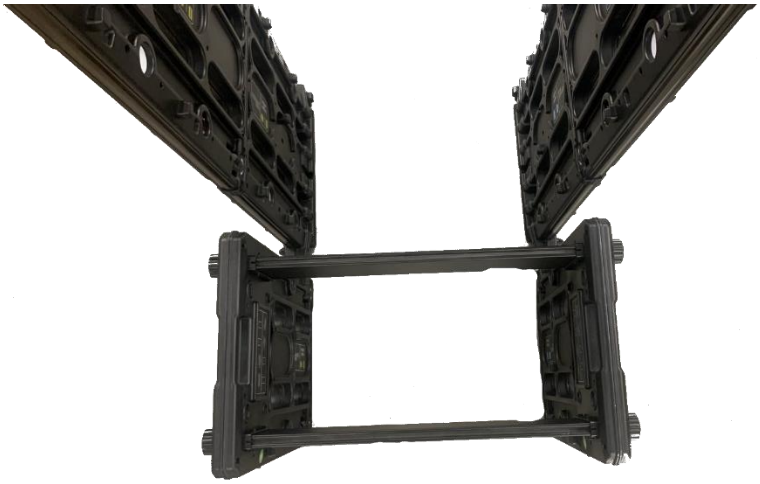
8. Now do the same with the other end but this time do not screw in all the way, this will allow us the space to get the second crossbeam into position.



9. Repeat steps 7 and 8 with plastic ended crossbeam.

10. Tighten all screws to ensure a good connection, these screws being tight also provides structural integrity.

11. Now that the top section has been constructed position the lower sections in line with the top section as shown in the photo.



12. Now lift and place top section on top of the two lower sections and tighten the screws.

13. Do one final walkaround to check all the coloured stickers are on the inside of the device and that the RiSK logos are the correct orientation.

DO NOT TURN ON THE DEVICE IF CROSSBEAMS ARE PLACED INCORRECTLY.

14. Now we can power up the device, ensure that all the green LEDs light up on both sides of the detector.

Disassembly

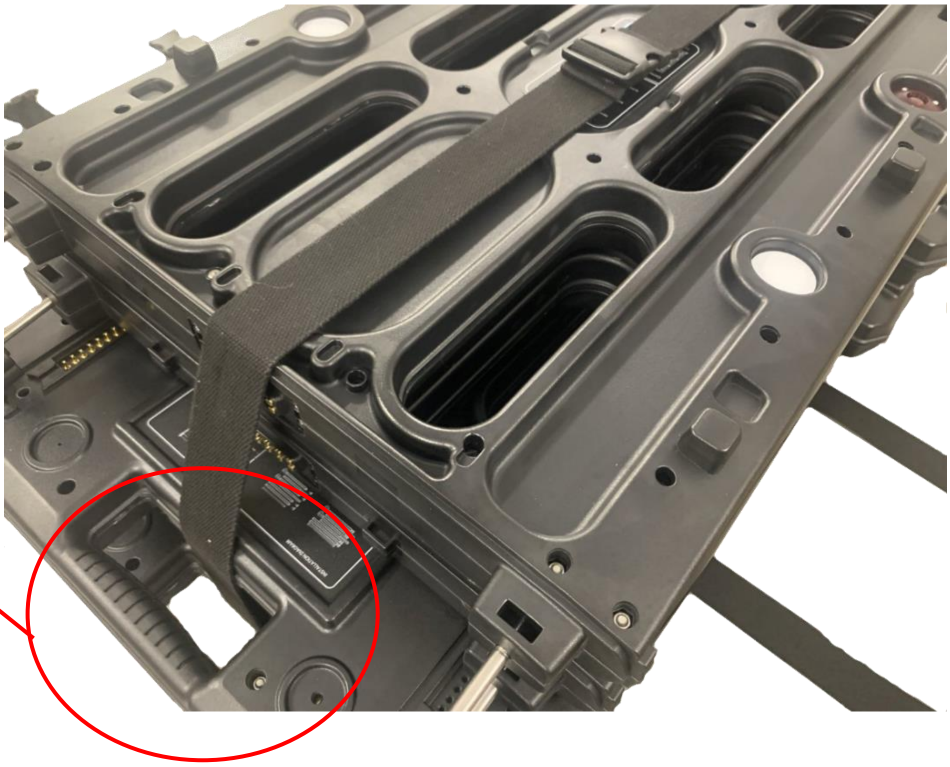
1. Turn off device and remove top section.
2. Unscrew crossbeams, making sure to hold the weight of the beams to prevent damage.
3. Unscrew middle section from bottom sections.
4. Place crossbeam screws into the tops of the bottom and middle pieces for safe keeping, you do not want to lose these.
5. Lay out the packing straps along the floor.
6. The RISK P1 has a specific order of how to pack it up. Bottom > Top (non-screen piece) > Bottom > Top (Screen piece) > Middle > Middle. Take note of lining up the different panels and coloured stickers should be facing upwards. As seen in the following pictures:

7. Start with a bottom piece.

8. Place the yellow top piece on top of the bottom piece as shown above, the handle should overhang the previous piece.

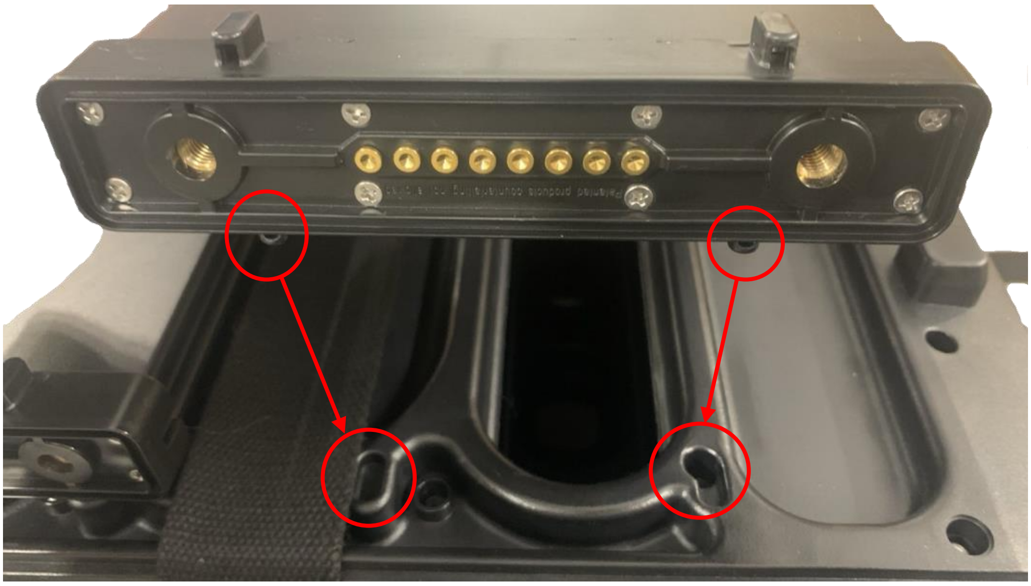
9. Next, we will place the second bottom piece on top ensuring to line up the wheels with the other.
10. The blue screen part will go next, ensure the screen if facing downwards with the coloured sticker facing upwards.
11. And finally, we will stack the middle pieces on top of one another, these will line up with the wheel pieces so that the handles are easily accessible.

12. Next take the strap next to the handles and pass it through the handles and connect with the opposite side as shown below.



Pass through handles

13. Now we'll place the crossbeams on top, do note the notches on the top where the crossbeams can fit. Below is a helpful look at them.



14. Now take the side straps and clip together and fasten. Your RISK P1 is now ready to be moved around freely.

5. Frequency, Security Level & Sensitivity

The frequency of the device indicates how often the electromagnetic wave occurs. This would only require changes if the location the device is being used is causing a disturbance such as from a power supply or strip lighting. When using in conjunction with other RISK P1's you will have to adjust the frequency of each knife arch to ensure they are not interfering with one another.

Security Level refers to the overall sensitivity of the device. Customisable from 0 – 100, this would be set to a level suitable for the objects an end user is looking for at the location. The higher the security level the higher the sensitivity and therefore the smaller the piece of metal that will cause an alarm. During calibration you will find the security level that's ideal for what you're searching for.

Sensitivity is the individual zone sensitivity. With 24 detection zones the RISK P1 can completely customise the sensitivity of each zone allowing for users to have a higher or lower sensitivity at different points on the persons passing through the detection field.

6. Calibration

The purpose of calibration is to ensure the RISK P1 is working accurately in accordance with your specific use case. This ensures that the knife-arch is detecting the specific objects that you wish to detect and not detecting other items. Correct calibration lowers the rate of false positives and therefore increasing the flow of people through the device.

Step-by-Step

Select the area for calibration and an object of a similar size and mass to the types of objects you wish the detector to alert you of.

Now determine the correct frequency. Do this by selecting a frequency and then viewing the home screen to check the interference meter. Repeat this process until the interference meter shows as all clear (All boxes to be coloured white).

Now to set the correct security level for your RISK P1. Factory settings are outlined below and are a great starting point to begin fine tuning what metal objects you are searching for. As standard the security level is set to 80. Increasing the security level will allow the knife arch to detect smaller pieces of metal such as jewellery.

Using your test object, walk through the knife arch holding the test object in a variety of different levels to ensure the object is alerting in each of the detection zone.

Original Factory Settings

The parameters for the RISK P1 have been set at the factory to detect different materials found in both ferrous and non-ferrous objects. The factory settings offer a good starting point for calibration, but for optimal use the RISK P1 calibration must be performed at the location of use.

RISK P1 Screen Settings

The device will ask for an admin password whenever you access any of the settings, as default the admin password is 00000000, after inputting the password the RISK P1 will not ask again for a short time.

HOME

Current Security Level

Current Frequency

HOME button

Detection/Interference meter

The home screen shows the Risk logo along with a detection meter, this also shows any interference the device is experiencing.

The RISK P1 will only alert when two conditions are met, the detection of metal as shown on the detection meter above, and when the Infra-red beams are broken, e.g. somebody walks through the detector.

To eliminate interference the device should be positioned away from large moving metal objects. If close to strip lighting or power supplies, then the frequency could require changing which is covered under the frequency settings later in this guide.

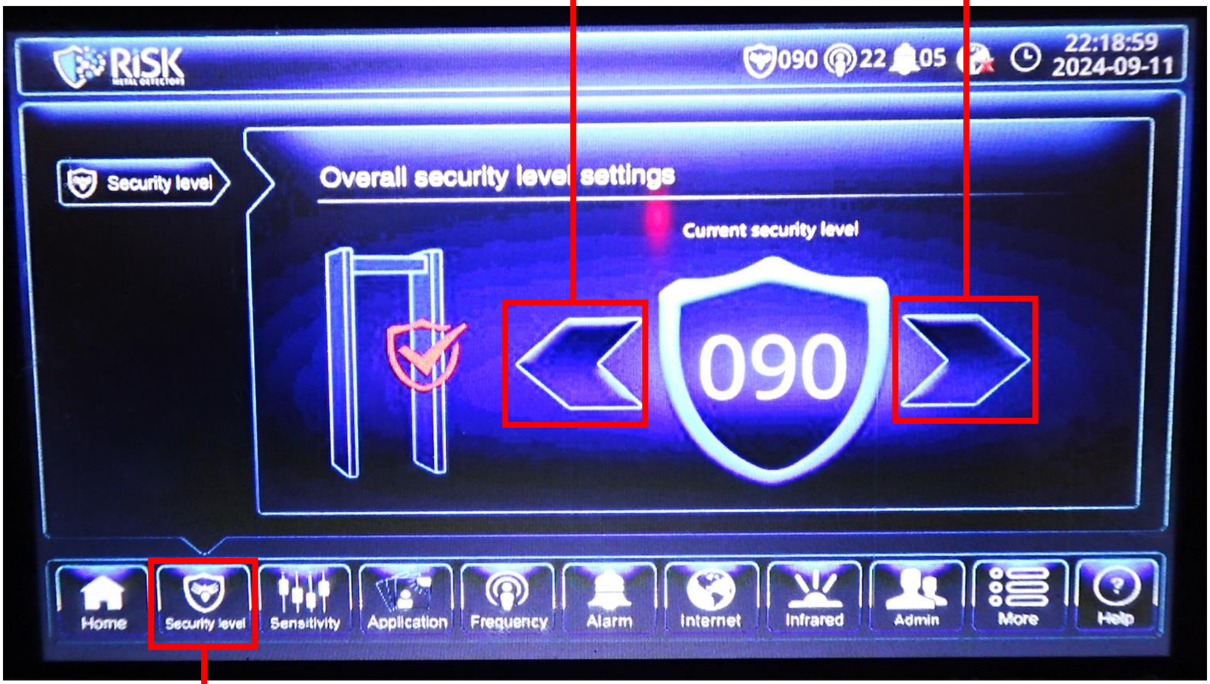
After building the device, allow to settle for around 30 seconds, as movement of the device from the force of turning it on or wind can create interference.

Once the detection meter is reading all white then the device is ready for use.

SECURITY LEVEL

Decrease Security level

Increase Security level



Security Level Settings

Security level is the overall sensitivity of the device across all zones. The higher the security level, the higher the sensitivity and the higher the sensitivity the smaller the mass of the metal that the RISK P1 will detect. You can adjust this by tapping on the arrows to the left and the right to decrease or increase the security level.

SENSITIVITY

Adjust Sensitivity

Detection Zones

Swap between top/bottom zones

Sensitivity Settings

Here you can adjust the sensitivity of each individual zone if required. Strongly advised to not change the sensitivity on this screen. Security level will be the setting to change regarding sensitivity. This screen should remain at the factory default of 240.

APPLICATION

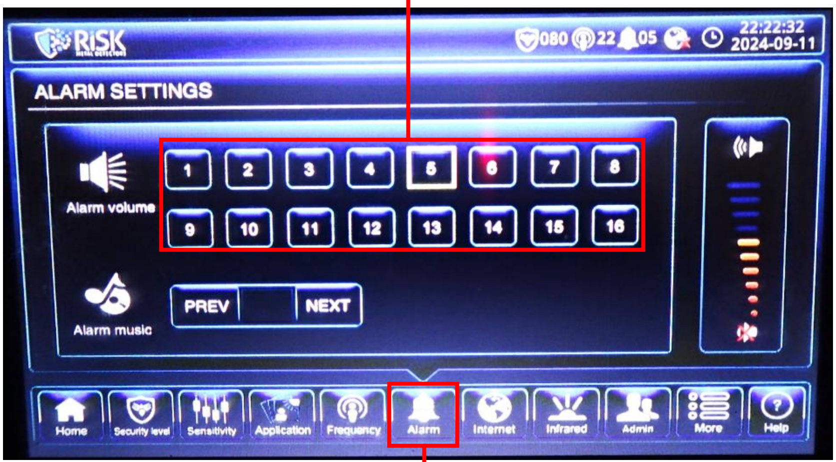
Application Settings

A collection of preset options for different applications of the deployment of the RISK P1. We strongly recommend that each user customises their own settings to fit the general use case for them.

FREQUENCY

Used to change the frequency of the device to prevent interference from electronic devices such as, a power supply, strip lighting or a second RISK P1. There is no correct frequency the device should be on; this will possibly change from site to site.

ALARM

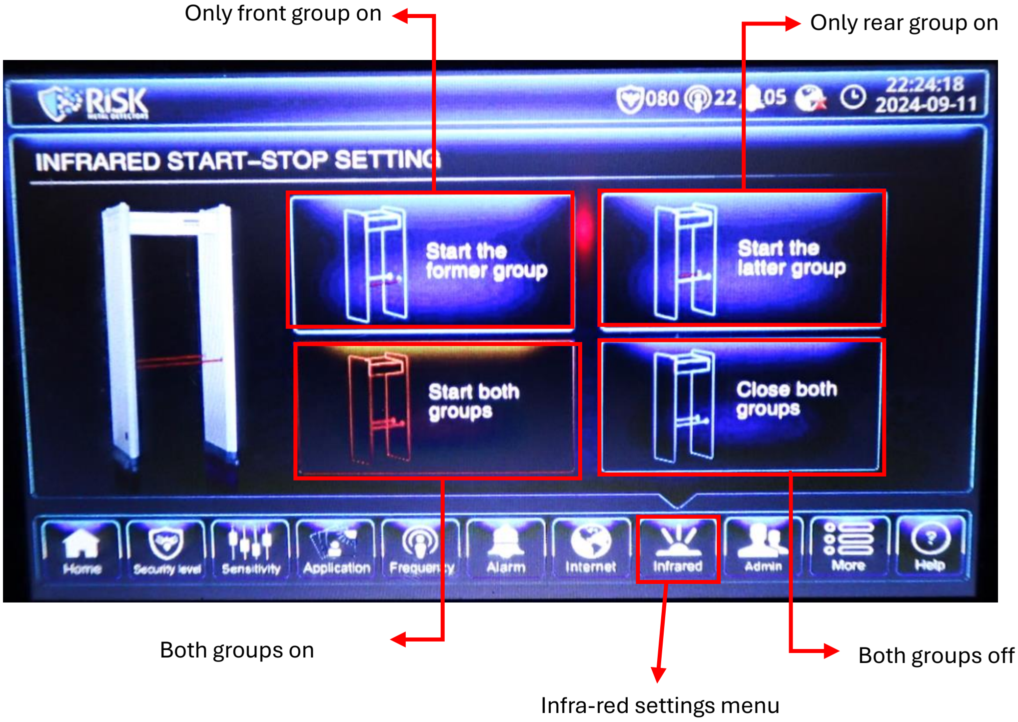


In this menu you can change the sound of the alarm when the device detects. We advise keeping it on number 5 as it's the most clear and concise alarm tone.

INTERNET

This will only be used by technicians to apply any firmware updates.

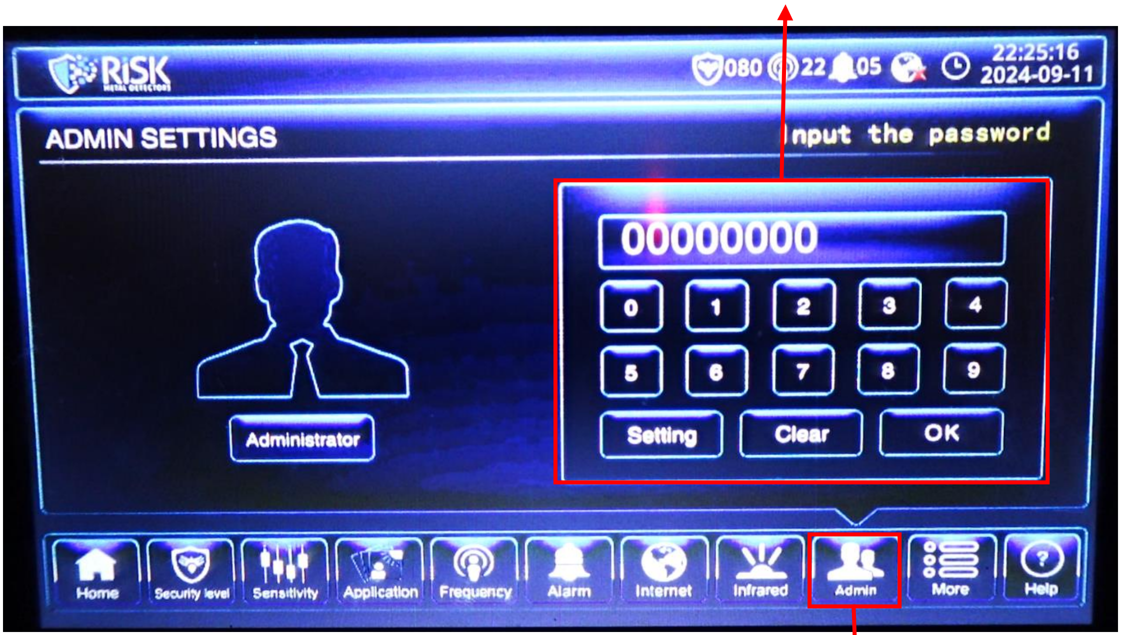
INFRARED



The detector will only alarm when two conditions have been met, the detection of metal and the breaking of the infra-red beams. These settings allow you to have both groups (front and back), one group or neither groups activated. By default, both groups are activated. These settings can be used to troubleshoot any issues with the infra-red and test each group independently. However, normal operation should be to have both groups activated.

ADMIN

Change password

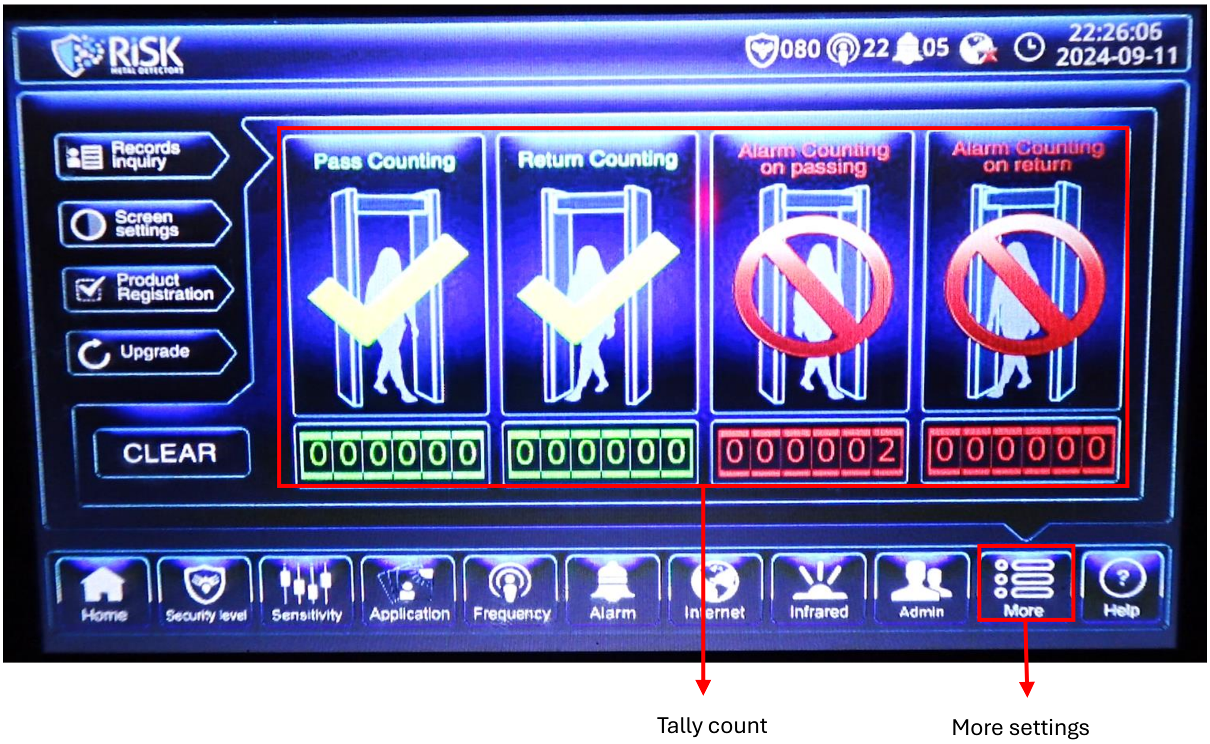


Admin settings

Admin settings allow you to change the admin password of the device. The default password is 00000000 and this should not be changed, this ensures there's no issues with forgetting a password or if any support is required then the technician will be able to help easily.

The device will ask for a password when accessing any of the settings. After asking for a password, you will be able to access any of the settings menus for a short amount of time before it locks you out and will require the password to be entered again.

MORE



The more settings show a tally count which can count people entering from either side of the detector and the number of alarms that have activated during use.

Charging the device

The RISK P1 comes with its own power supply to be used to charge or power the device for extended usage. There are two power connections available, one on the bottom blue piece and one on the blue screen piece.

The bottom connector should be used to power the device whilst in use for extended periods.

Whereas the top connector should be used after the device has been disassembled to charge between uses.

Power connector

Rain cover and outside usage

Also included is a rain cover. The RISK P1 is not water resistant on its own, it requires the use of the supplied rain cover for use outside.

The rain cover goes over the device and wraps around both sides which then zips up on the inside of the device.

Features clear windows so whilst in use you can see the LED lights for detection as well as windows to ensure the cover itself does not block the infra-red beams creating false positives.

DO NOT PLACE IN STANDING WATER.
The feet are left exposed therefore are not water resistant.

Frequently Asked Questions

How quickly can the RISK P1 be set up?

The RISK P1 can be assembled by a trained operator in just over 5 minutes due to its modular design. No tools are required to set up the device with everything being attached to the device whilst deconstructed.

What is the power source and battery life of the RISK P1?

The RISK P1 can use both main and battery power. It has a large 12000 mAh battery allowing for up to 9 hours of use without mains connection. The duration of battery life will differ depending on the weather, frequency of use and age of the battery.

Can the P1 be transported easily?

Yes, it is designed to be fully portable, easily deconstructed, transported and reconstructed in a short time span. It generally takes between 5 to 7 minutes for a single user to build the P1. When it its deconstructed form, the RISK P1 has wheels located on the bottom that allow the device to be pulled along.

Is there any training required to operate the RISK P1?

Everything you need is located within this manual, however here at RISK Metal Detectors we do offer training sessions alongside delivery of your new RISK P1. Alternatively, you can contact us so we can answer any questions you may have.

What is the warranty on a RISK P1?

12 Month Manufacturer's Warranty on parts and labour.

Does the RISK P1 require regular maintenance?

The RISK P1 does not require regular maintenance or servicing. It functions like any other piece of electrical equipment and if it is treated well, will last for many years. Following the maintenance and care instructions in this manual will enable your RISK P1 to be used for an extended period of time.