metrasens

Metrasens Ultra®
Operating the System

V.3 | 2025

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1. Operating The System

1.1. SWITCHING THE SYSTEM ON AND OFF

To switch the system on, press and hold down the circular power button on the front face of the system for two seconds.

The system takes approximately five seconds to start and displays an introduction screen as it runs through its startup sequence. When ready for use, the system displays the standard dashboard screen and the alert indicator beacon changes from RED to GREEN.

To switch the system off, press the power button, or touch the 'Power Off' function on the touch screen.

Note: To maximize battery life, always turn the system off when not in use, and avoid letting the battery run down completely. However, if the system is still plugged in to a power source, the battery continues to charge until fully charged. In this case, the display shows the charging screen.

1.2. STANDARD OPERATING MODE

The touch screen is located towards the top of the system on the front face, and can be operated:

- with or without gloves.
- with wet hands, or in wet environments.

This user interface provides the necessary controls to set up and adjust most aspects of the system operations.

Some system functions are available directly from the dedicated icon controls on the dashboard screen. Further setup functions are available through the settings screen.

The dashboard provides the following functions and controls:

No.	Control	Function description
1	Top bar. Battery charge icon. Time display.	This is displayed on most screens and always shows the currently set system time, and the current battery charge status. This icon shows the remaining percentage (%) of battery charge. A fully charged battery can power the system for typically 16.5 hours (depending on the system configuration and screening rate). The displayed battery charge changes in 1% increments from 100% to 1%. The time and format are set using: Dashboard > Settings > Localization > Set Time/Date
2	Sensitivity control.	Touch to display the sensor sensitivity setting screen. Min = 1, Max = 10.
3	Gear icon.	Shortcut to menu.
4	Power icon	Touch to begin powering OFF the system.
5	System settings shortcut	Shortcut to change system settings, Volume, sensitivity and brightness.
6	Lock icon.	Touch to lock the touch screen.

1.3. ADJUSTING SYSTEM LEVELS

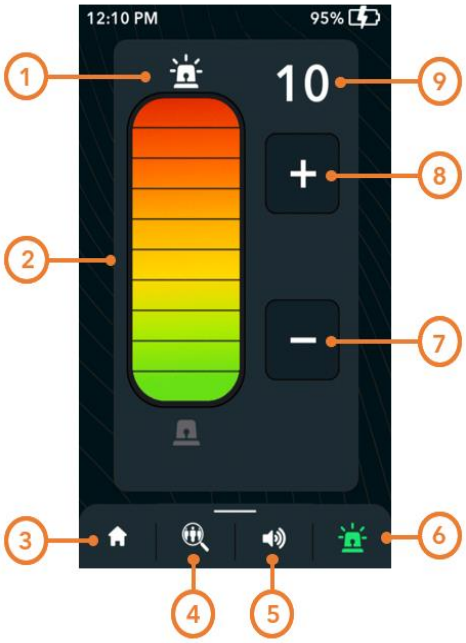
There are three system levels that are set up using an almost identical screen and controls:

- Sensor sensitivity.
- Alert volume.
- Alert indicator brightness.

From the dashboard screen, touch the required icon control to display the respective level setting screen.

A level setting screen provides the following functions and controls (the sensor sensitivity screen is shown as an example below):

No.	CONTROL	FUNCTION DESCRIPTION
1	Level setting screen icon.	This shows the currently selected function:  - Sensor sensitivity  - Alert volume  - Alert indicator brightness
2	Level display.	Touch anywhere on this graphical display to move directly to that level setting or slide up or down to increase/decrease the level.
3	Home.	Touch to save your setting and return to the dashboard (Home) screen.
4	Sensitivity control.	Touch to alter the sensitivity setting.
5	Volume control.	Touch to alter the volume setting.
6	Alert indication control.	Touch to alter the beacon brightness setting.
7	Decrease button.	Decrease the numeric value of the setting/bars on the slider.
8	Increase button.	Increase the numeric value of the setting/bars on the slider.
9	Current value	Displays the current numeric value of the setting.



2. System Timeout And Lock

To avoid any unauthorized adjustment or use of the Metrasens Ultra system, the touch screen automatically locks thirty seconds after the last touch.

When locked, the dashboard screen displays a large grey padlock icon, and does not respond to touch.

You can also manually lock the screen when you have configured the system by simply touching the lock control on the dashboard screen.

2.1. UNLOCKING THE SCREEN

There are two options to unlock the screen. Both are selected in the Advanced Settings screen.

- **NO PIN REQUIRED**
  In this mode, touch and hold the center of the padlock icon for more than three seconds to unlock the screen.
- **PIN REQUIRED**
  In this mode, touch the center of the padlock icon to display the PIN code entry screen. Then enter the four-digit PIN code and touch the unlock control to unlock the screen.

Note: *If you lose or forget the PIN, it can be reset - refer to the Metrasens Ultra System Settings Guide*

3. Setting The Screening Sensitivity

The screening sensitivity of the system can be adjusted to one of ten levels, so it is more, or less sensitive to small ferrous objects. The higher the level, the smaller the magnetic signature needed to trigger an alert.

3.1. FACTORS FOR CONSIDERATION

The detection performance of the Metrasens Ultra system is related to:

- The object's magnetic signature size depends on the amount of ferrous material the object contains.
- The distance the object is from the system.

Therefore, a small ferrous object very close to the system can trigger an alert in the same way as a large ferrous object at some distance from the system.

In most screening situations, a compromise must be made between the system reliably detecting the objects you want, and the probability of the system generating unwanted or false alerts. Extraneous alerts are normally caused by distant moving objects like traffic, elevators, or doors, which create a magnetic signature.

The optimum sensitivity setting for any screening situation strikes the right balance between the factors below:

- Setting the Metrasens Ultra to level 1 means that only relatively large ferrous objects, moving close to the system, are likely to set off the alert. Small objects (even close to the system) will not be detected; neither will large objects further from the system. However, the probability of unwanted alerts is very low.
- Setting the system to level 10 means that very small objects cause an alert. This setting may also detect some larger objects that are quite far away from the system. However, the probability of unwanted alerts is high.

You can improve the system's screening performance by positioning the system away from any potential interference sources. You can also select the screening procedures which find the objects you want to detect.

3.2. SETTING THE SYSTEM'S SCREENING SENSITIVITY PRIOR TO USE

To set the Metrasens Ultra system's screening sensitivity, do the following:

1. Ensure there are some suitable test target objects available of the type the intended screening operation has been set up to detect.
2. Place the Metrasens Ultra system in the chosen screening location, keeping in mind the recommended distances from potential interference sources.
3. Switch the system on and set the sensor sensitivity to the maximum level (10).
4. Stand back about 2 m (6 feet) from the system and watch the signal strength indicator display. If more than one red bar flickers regularly, reduce the sensor sensitivity by one level.

5. Repeat the step above until the system appears stable. However, if the sensitivity needs to be reduced significantly before extraneous alerts cease, you may have to consider moving the system to an alternative location or investigate the immediate location for an interference source.

6. After making sure you are **not** carrying any ferrous objects, perform a test screening by walking past the system. The system should not give an alert.

7. Carrying a test target object (the smallest you want to detect) perform another test screening by walking past the system. The system should detect the test target object and give an alert.

8. Perform further test screenings carrying a range of test target objects, ensure all are detected.

Note: *The detection performance of the Metrasens Ultra system reduces when the sensor sensitivity level is decreased. To avoid failing to detect the objects you need to detect, try rotating the system slightly, or move it to a different position and then repeat the above procedure*.

4. Touch To Screen Operating Mode

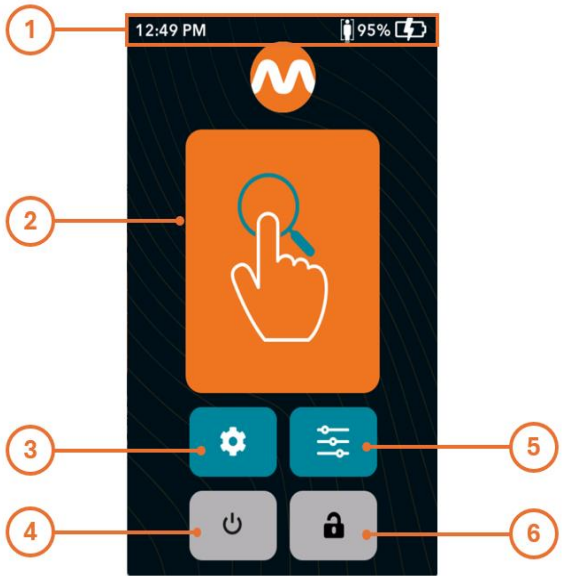
In Standard operating mode, the Metrasens Ultra system is always active and continually screens the local environment for magnetic signatures, and the operator simply needs to manage the flow of individuals to be screened.

However, in some circumstances (especially where the system is positioned close to a busy corridor) extraneous alerts can be triggered as people walk past. In this situation, an operator may prefer the system to be in standby mode most of the time but quickly start screening when an individual to be screened presents themselves.

The Metrasens Ultra system supports this method of screening with its Touch to Screen mode.

When configured to operate in this mode, the system illuminates the alert indicator beacon permanently red, to indicate that screening is suspended, and displays the Touch to Screen version of the dashboard. All the standard operating functions are available on this dashboard version, but the control layout is slightly different, as shown below:

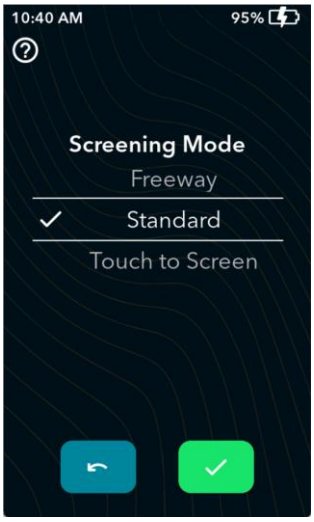
No.	Control	Function description
1	Top bar.	Time, battery/charging information as standard.
2	Touch to Screen control.	The finger and button icon indicates the system is in the Touch to Screen standby mode. Touch to start the screening process.
3	Gear Icon	Shortcut to the settings menu.
4	Power OFF.	Begins process of turning off system via the touch screen.
5	System settings shortcut.	Shortcut to change system settings, Volume, sensitivity and brightness.
6	Lock icon.	Locks the system touch screen.



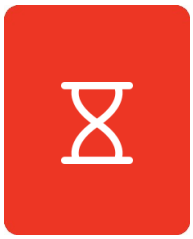
4.1. USING THE TOUCH TO SCREEN FEATURE

To perform a Touch to Screen operation, do the following:

1. Select the feature by touching the settings icon on the home page>Advanced Settings>Screening Mode.



2. Toggle the button to enable or disable the Screening Record. This is a unique code generated after an individual screening period has finished. The code can be used to retrieve information about when the screening took place, and the detection results during this time using the Metrasens SMS tool.
3. Choose the screening time. The default is 7 seconds and can be increased in 1 second increments to a maximum of ten seconds.
4. Momentarily touch the Touch to Screen control.
5. Once touched – a RED icon appears to show that the screening has not started. This lasts for two seconds and allows time for you to step away from the screening area. During these two seconds the system is not screening, and the alert indicator beacon remains red.



Do **not** attempt to start screening until the BLUE icon is displayed.

6. After the two second pause, the blue screening active icon is shown on the screen. At the same time the alert indicator beacon turns GREEN, to indicate that screening is now active.

7. During the countdown period invite the subject to perform a normal 360° turn screening operation.

Once the screening time has expired, the following occur:

- If you have selected to show the screening record, this unique code will be presented on the screen.
- The screening active screen turns back to the inactive icon.
- The beacon turns RED.
- The system is no longer screening.

4.2. TOUCH TO SCREEN MODE CONSIDERATIONS

The countdown screening time can be set to 7, 8, 9 or 10 seconds when you select the Touch to Screen mode in advanced settings.

If required, you can use the dashboard lock function to prevent unauthorized access to the system settings when operating in the Touch to Screen mode. If the system is locked, touch and hold the highlighted lock control for 3 seconds. If PIN security is enabled, enter the PIN code when prompted, to unlock the system.

5. Freeway Operating Mode

The Freeway operating mode is used specifically for high-throughput weapons screening and should be used in conjunction with the specific Freeway screening arrangement described below.

***Note:** Freeway mode should **not** be used where the objective is to detect small ferrous objects.*

Three settings, Low, Medium and High refer to the approximate magnetic signal of the objects to be detected.

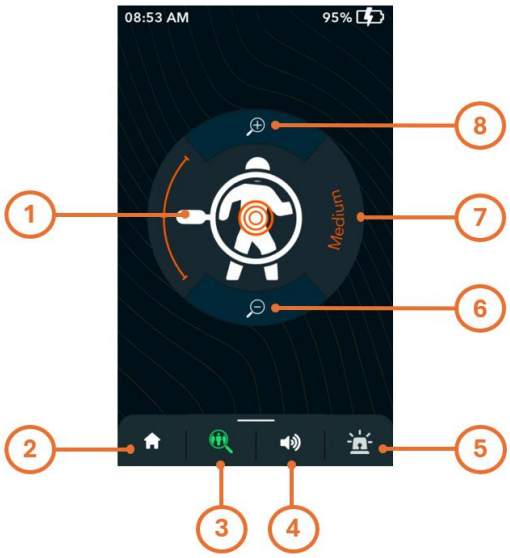
If the aim is to detect a high percentage of all weapons, bladed and otherwise, then the High setting should be used.

The medium setting will detect a high percentage of larger threat items but is less sensitive to smaller threat items than the high setting.

Similarly, if the aim is to focus on the detection of a high percentage of larger threat items, the Low setting should be used. Many smaller threat items will still be detected, but the percentage is far lower.

It is important that you discuss the sensitivity settings with your sales representatives and trainers to understand the best sensitivity mode for your security operation

No.	Control	Function description
1	Magnifying glass handle	Can be used to slide the setting up or down between the three options.
2	Return to home screen.	Returns to the Freeway home screen.
3	Sensitivity Selection Icon	The screen that users can alter the sensitivity for the specific screening mode.
4	Volume Icon	Change the alert tone volume.
5	Brightness Icon	Change the LED brightness.
6	Minus Symbol	Lowers the sensitivity level.
7	Current Setting Text	Displays the current sensitivity level by text, either Low, Medium or High
8	Plus Icon.	Raises the sensitivity level higher.



For Freeway operation, create a screening channel by placing a suitable queue barrier in front of the system so the individuals subject to screening must walk through in single file. The distance between the queue barrier and the system should be exactly 76 cm (30 inches). It is recommended that at least two persons fully trained in this type of screening man the operation, one as a greeter, one as a Screener.

For the best results, use Metrasens Freeway mat, which provides guidelines on lane set-up and placement.

When performing the Freeway screening:

- Maintain at least a 1.2m (4 foot) separation between each person being screened.
- Maintain at least a three second gap between each person being screened to avoid nuisance alarm triggers from other individuals.
- Demonstrate the required arms-out method. This ensures the individual is fully screened for any weapons, but other objects which may cause an alert are held out of the screening channel.

Invite each person to:

- Hold any personal metallic objects across the queue barrier using the arms-out method - this is a **crucial** aspect of Freeway screening.
- Walk through the screening channel and pass the system at a normal walking pace.
- If the alert sounds and the indicator beacon show red, take whatever secondary screening steps are necessary to safely find and remove any metallic objects from the screened subject.

5.1. FREEWAY SCREENING ARRANGEMENT AND OPERATION EXAMPLE

No.		Description
1	Greeter.	The Greeter demonstrates the required arms-out method, requests the individual holds any personal metallic objects, and maintains at least a three second gap, with a 1.2m (4 foot) separation between the individuals being screened.
2	Personal items.	These are any metallic objects the screening subject may have on their person, such as phones, electronic tech, ear pods, key fobs, lighters, vapes, and so on - held over the queue barrier and out of the screening channel.
3	Screener.	The screener ensures the required arms-out method is used, checks for alerts, and manages any secondary screening steps, where necessary.
4	Queue barrier.	This physically defines the screening channel.
5	Screening channel.	The distance between the system and the queue barrier must be exactly 76 cm (30 inches).

6. People Counter *(Model Dependent)*

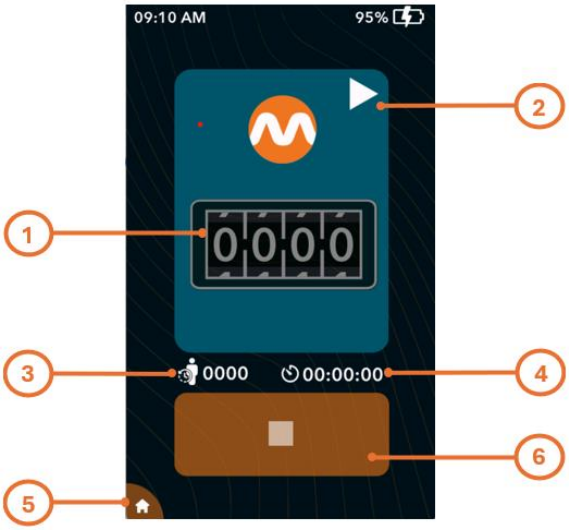
If your Metrasens Ultra has the embedded optical sensor below the touch screen *(serial numbers 3325-3310 onward)* your system can access the People Counting feature.

This feature is available while using Standard, or Freeway screening modes.

The Metrasens Ultra will automatically detect if this hardware is present, and alter the touch screen graphic to include an icon in the bottom right corner as shown circled:

If this icon is present, swipe right to left on the Standard or Freeway home screens to access the people counter.

No.		Description
1	Count Display	Registers people successfully counted *(Increments by 1 with each successful person detected)*
2	Pause Count	Pauses the count (touch anywhere in the blue box)
3	Last Count	If the stop counter is pressed once, this displays the last count
4	Count Time	Displays the count session time
5	Swipe Home	Swipe Left > Right to return to the home screen
6	Stop Count	One press stops the count but registers the last count (item 3). Pressing twice resets the count entirely.



6.1. USING THE PEOPLE COUNT FEATURE

The optical sensor that facilitates the People Count feature registers that a person has entered the designated screening area and will only count +1 once the sensor has indicated that the person has moved past the sensor.

The distance that the sensor will accurately count has been set to the screening channel width specified in the Freeway screening guide (31'/78cm).

This feature has been designed in this way to reduce the chances of a false count during regular operation.

An example would be during a walk by screening con-op, if a person being screened caused an alert, and was told to stop, their presence in front of the sensor would not cause a false count whilst the security guard paused the count, and they were removed for secondary screening.

The results of a People Count session will also appear in the audit trail. These records appear as follows:

- Date/Time – People Count Started: 0
- Date/Time – People Count Stopped: (Number of people counted)

⚠ CAUTION

Warning: Model numbers 3325-3310 and upward, that contain the People Counting sensor uses a Class 1 laser for optical sensing. This Class 1 laser is eye-safe under all operating conditions in accordance with IEC 60825-1:2014 Safety of Laser Products.

Class 1 laser systems cannot emit levels of optical radiation above the exposure limits for the eye. They are safe during use, including long-term direct intrabeam viewing even when exposure occurs while using telescopic optics.

7. Floor Suppression

Metrasens Ultra is designed to work in many complex environments, however there are times when interference sources are present that may cause nuisance alarms at the lower zones.

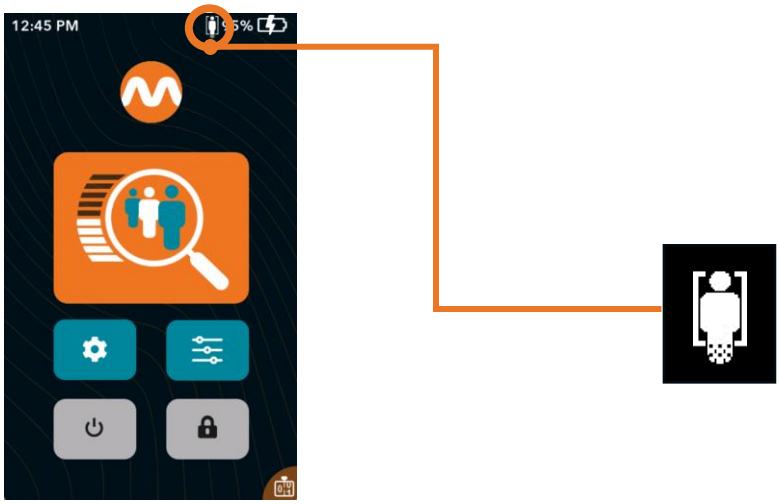
Often this is from loose, ferrous flooring tiles where the Metrasens Ultra (although doing what it is supposed to – detecting moving ferrous objects) detects the movement of the floor itself as people walk past. This would present itself as regular alarms at the lowest zone.

Note: *Metrasens recommend taking steps to remove or reduce the interference before selecting any suppression modes, such as repositioning the system or if possible, securing any loose tiles.*

Floor Suppression mode reduces the detection performance around the lowest zone and therefore can reduce the impact of interference sources that may be present and can be selected alongside any of our Screening Modes.

To turn Floor Suppression on, go to Settings > Advanced Settings > Suppression Profiles > Floor

Any Screening Mode home screen (Standard, Freeway or Touch To Screen) will now show the Floor Suppression icon in the top right-hand corner, as shown below:



Floor Suppression will remain on even if the system is restarted, therefore a message appears on startup to remind the user if there are any Suppression Profiles still active.

To turn Floor Suppression off, go to Settings > Advanced Settings > Suppression Profiles > Standard

This will reset the system to Standard screening detection performance at all levels. It is advised that the user checks that the Floor Suppression symbol is no longer present on the home screen to confirm that deselection was successful.

Note: If you have any questions about the impact of using this mode on detection performance, please contact your sales representative or support@metrasens.com

8. Alert Indication And Object Location

The Metrasens Ultra system has three different visual indicators, and one audible alert.

No.	Description
1	**Alert indicator beacon** Green = No ferrous objects detected. Red = Ferrous object detected.
2	**Signal strength level indicator** 0 bars = No detection. L1 red bar = Detection - small signal. L5 red bars = Detection - large signal.
3	**Object location zone** These light up in blue at one of five height zones, to indicate the approximate height of the detected object (see below).

When the system detects a ferrous object, the following occurs:

- The color of the alert indicator beacon at the top of the system changes from green to red.
- The signal strength level indicator shows the current detection signal strength between one and five red bars. One bar illuminated shows the signal is quite weak. However, if the signal continues to get stronger, such as when the object gets closer to the system, then additional red bars are illuminated. Five bars show a strong signal.
- If enabled, the audible alert sounds.
- Once the object reaches its closest point, and the detection signal is at its strongest, one of the five blue zone location indicators is illuminated to show the approximate height of the object. However,

due to the irregular shape of magnetic fields around an object, the actual location may be some height above or below the indicated zone.

- The beacon, signal level, audible alert, and zone indicators stay on for a short time. At the end of this period, the system is reset.

Screening can continue as soon as the beacon indicator switches back to green.

8.1. OBJECT LOCATION ZONE INDICATORS

The five object location zone indicators are assigned to the following identification numbers, where Zone 1 is located closest to the floor/Zone 5 towards the top. These numbers are used by the system when generating an alert detection audit trail report.

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