



Metrasens Ultra[®] Installation and Troubleshooting

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1. Placement

1.1. CHOOSING A SUITABLE LOCATION

Metrasens Ultra can be used indoors or outdoors, wall-mounted in a static location or used freestanding around your facility.

The system needs to be placed on a level floor. To avoid any chance of the system tipping over, install the base unit on a hard, non-porous surface where the suction feet can be effective.

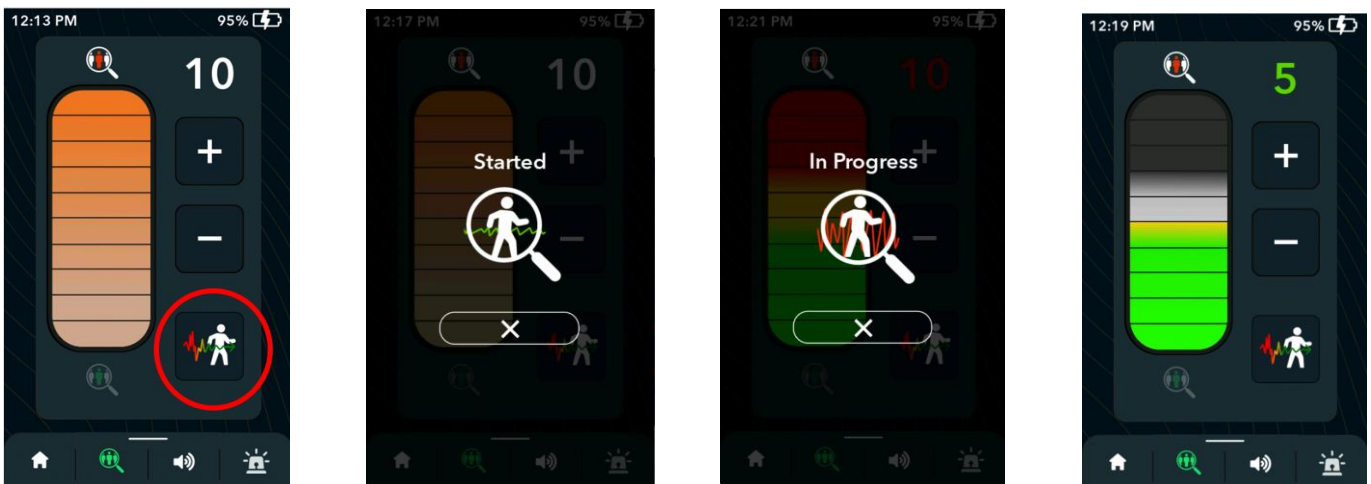
To avoid extraneous alerts, always:

- Ensure the AC/DC power adapter and cables are positioned at least 20 cm (8 inches) from the system.
- Placing the AC/DC power adapter at the rear of the base unit is acceptable but avoid placing it on top or by the side of the base unit.
- Route any PoE cables away from the system.

1.2. ENVIRO-SCORE FEATURE

As part of release 4.0, the Metrasens Ultra includes a feature that can assist in choosing a suitable location for your system – Enviro-Score.

The Enviro-Score, once activated, listens to the magnetic environment around the Metrasens Ultra for 60 seconds, and provides a recommendation of the sensitivity levels that the system can operate without spurious alerts occurring due to interference.



Press the Enviro-Score icon and step back 2metres. The beacon will turn blue, and the feature will indicate that the process has started. After 60 seconds the touch screen will display the original sensitivity screen and indicate the sensitivity choices with green (stable), orange (occasional false alerts) or red (unstable area).

It is important to understand the sensitivity levels that need to be achieved, depending on the con-ops/items you are intending to detect. If the result of the Enviro-Score recommendation falls below this required sensitivity level, please move the system slightly, and try again. Should the result be the same, please consider a different area to deploy the system to ensure accurate performance is achieved

1.3. RECOMMENDED DISTANCES FROM POTENTIAL SOURCES OF INTERFERENCE

You can locate the system near static metal objects, such as metal staircases, filing cabinets, or 'rebar' used in wall reinforcing. However, to avoid extraneous alerts, do not place the system close to any electrical products with moving parts, such as ceiling fans, elevators, photocopiers, and automated entry systems.

It is important to note that other less obvious moving parts, such as cooling fans within equipment, could also cause unwanted alerts.

Metrasens Ultra detects any moving ferrous object around the center of the system, so it is important to consider any objects that may be located behind the system or on the other side of any nearby walls.

The following table shows distances from potential interference sources and assumes a level 7 sensitivity setting. If the sensitivity is higher, the distance to the interference source should increase. If set lower, the range may be reduced.

POTENTIAL INTERFERENCE SOURCE	DISTANCE			
	MINIMUM		RECOMMENDED	
	METERS	FEET	METERS	FEET
ROAD TRAFFIC	7	23	12	40
CELL DOORS	3	10	5	16
CORRIDOR WITH PASSING TROLLEYS	2.5	8	4	13
SWIVEL CHAIRS	2.5	6	3	9
HVAC/AIR CONDITIONING UNITS/POWERED FANS	2.5	8	4	13
SWINGING DOORS	2	6	3	9
SCREENING PERSONAL WEARABLES (STEEL TOECAPS, RADIOS, KEYS)	1.5	5	2	6
LARGE ELEVATORS	7.5	25	10.5	35
SMALL ELEVATORS	6	20	7.5	25
AUTOMATIC DOORS	2.5	8	4	13
LOCKERS	1.5	5	3	10

1.4. ASSEMBLING THE SYSTEM

CAUTION

The system and the base unit are heavy, with a combined weight of over 21 kg. (46 lb.).

If you need to move the system to a different location, remove the system from the base unit and carry each component separately.

To assemble the Metrasens Ultra system, do the following:

1. Place the base unit in the location you selected for screening.

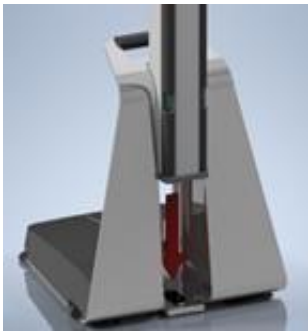


Note: If you need to adjust the position of the base unit at any point during system assembly, follow the instructions below to insert the system securely into the base. Then, use the system to lever the suction cup feet from the floor and carefully lift the entire system to the new position.

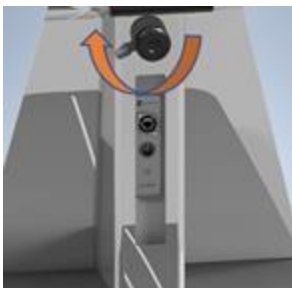
2. Check the black locking knob is unscrewed a couple of turns and the clamping lever is entirely in the anticlockwise position to inset the system into the base unit.



3. If fitted, disconnect any leads from the sockets on the back of the system.
4. Ensure the system is aligned so the touch screen is at the front and the connector sockets are at the back.
5. Place the indent in the bottom of the system into the block at the foot of the base unit.
6. Push the system back against the vertical slot in the base unit.



7. Ensure the base unit captures the groove at the back of the system.
8. Hold the system in this position until you have clamped it into the base.
9. On the rear of the base unit, turn the clamping lever at approx. 90° in a clockwise direction until it stops, then turn the black locking knob a couple of turns to secure the system to the base unit.
10. **Important:** Do not overtighten the locking knob - hand-tighten only.



2. Powering The System

WARNING

You must **ONLY** use the AC/DC power adapter indoors, in a dry location.

NOTICE

Only use the AC/DC power adapter supplied with the system or an alternative adapter authorized by Metrasens.

NOTICE

Protect the AC/DC power adapter and its associated cables and ensure they do not cause a trip hazard.

You can run the Metrasens Ultra system from various power sources. However, the actual power source used is based on the priority sequence of:

2.1. DC POWER (IF PRESENT)

When the AC/DC converter is turned on, and is plugged into the Metrasens Ultra, the system will run from this power source.

If the internal battery needs charging and the system is plugged into the AC/DC power adapter, the system automatically charges the battery, even if the system is not switched on.

In that case, the touch screen display informs you of the current charge level.

Note: Keeping the AC/DC power adapter plugged in will not harm the internal battery. Charge level is maintained by the Ultra Battery Management System.

To avoid causing extraneous alerts, ensure that the AC/DC power adapter and cables are positioned at least 20 cm (8 inches) from the system. Placing the AC/DC power adapter at the rear of the base unit is fine, but avoid placing it on top, or by the side of the base unit.

2.2. POE (IF PRESENT)

In facilities where PoE sockets are available, the system can be directly plugged into this type of socket. However, where power is supplied through PoE, it is recommended that **Cat 6A** cables or above are used. The system uses the PoE 802.3bt standard, and draws up to 20 W.

To avoid causing extraneous alerts, always route the PoE cable away from the system.

If the internal battery needs charging and the system is plugged into PoE, the system automatically charges the battery, even if the system is not switched on.

2.3. BATTERY

If you turn on the system without a DC or PoE power source connected, the system automatically switches to run from the internal rechargeable battery.

3. Battery Status Warning

The Metrasens Ultra system has a battery status warning function to alert you to the current charge state.

3.1. BATTERY LEVEL LOW WARNING

When the battery charge state reaches the preset warning level during normal operation, a 'Battery Level Low' message appears on the touch screen. An audible battery warning tone is also periodically sounded.

By default, the preset 'Battery Level Low' warning threshold is set to 25% battery charge remaining. However, this value is operator configurable.

To continue operating the Ultra system, plug in an alternative power source (AC/DC power adapter, or PoE) as soon as possible, and close the warning message by touching OK.

3.2. BATTERY LEVEL CRITICAL

When the battery charge state reaches the preset critical level during normal operation, a 'Battery Level Critical' message appears on the touch screen. An audible battery critical tone is also periodically sounded.

By default, the preset 'Battery Level Critical' threshold is set to 10% battery charge remaining. However, this value is operator configurable.

To avoid the Metrasens Ultra system shutting down, plug in an alternative power source (AC/DC power adapter, or PoE) as soon as possible, and close the critical message by touching OK.

4. Dismantling And Moving The System

⚠ CAUTION

The system and the base unit are heavy, with a combined weight of more than 21 kg (46 lb.).

If you need to move the system to a different location, first remove the system from the base unit and carry each component separately.

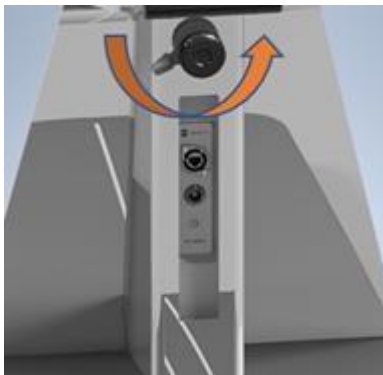
Note: In the case of a rapid deployment, simply use the system to lever the suction cup feet from the floor, and carefully lift and move the entire system as one piece to the new position.

To dismantle and move the system, do the following:

1. Unplug any cables fitted to the rear-mounted connector panel.



2. Slacken the black locking knob by turning it anti-clockwise a couple of turns. Do not loosen it more than this.
3. Turn the clamping lever to the fully anti-clockwise position. This releases the system from the base unit.



4. Carefully lift the system in an upward direction until it is clear of the locating feature at the bottom of the base unit.
5. Once fully clear, lift the system forward and away from the base unit.



6. Temporarily place the removed system in a safe location.
7. To release the base unit from the floor, simply pull up the edge of each suction cup foot and lift.
8. Move the system and base unit separately to the new screening, or storage location.

4.1. SYSTEM STORAGE CONSIDERATIONS

Always store the system in a safe, cool, and dry place within the temperature range 5-15°C / 40-60°F.

If you need to store the system for a long time, ensure the battery is partially charged to 40% instead of 100% to help extend the battery life.

5. Operating Conditions

Condition	Specification
Temperature Range	Operating range on battery: -5 ° F to 120 ° F (-20 ° C to +60 ° C) Charging and DC power operation 32 ° F to 104 ° F (0 ° C to +40 ° C). You must only charge the system indoors.
Humidity	95% non-condensing
IP Rating	IP65 certified
Maximum Altitude	6,500' (2,000m)

6. Troubleshooting

Use the information and procedures in the following tables to assist when an operational issue arises when using the Metrasens Ultra system.

6.1 SYSTEM START ISSUES

PROBLEM	TROUBLESHOOTING STEPS
No indicators or alert, and no display on the touch screen.	<ul style="list-style-type: none"> • Check the system switch on procedure has been correctly followed. • If the system is using the AC/DC power adapter, check that this is plugged in correctly and that the AC power is switched on. • If the system is using the battery as the power source, check the battery charge level. The best way to do this is to plug the system into the AC/DC power adapter and power on. Check the battery level icon on the dashboard screen. If it is too low, charge the battery by leaving the system plugged into the AC/DC power adapter until it is sufficiently charged. • In the rare event that the system did not shut down properly, any subsequent startup could be affected. To check and/or correct this situation, hold down the round power button for ten seconds, release, then press again to start up. • If the system is running off PoE, ensure that the system is plugged into an actual PoE socket, not just a basic Ethernet socket.
The touch screen is working, but no indicators or audible alert.	<ul style="list-style-type: none"> • Check the alert indicator brightness level is set to between 1 and 10, as a setting of 0 indicates covert operation, with no visual indicators operating. • Check the alert volume level is set between 1 and 10, as a setting of 0 means the alert is in mute mode. • If the touch screen is showing a large battery icon, the system is in charging mode rather than screening mode, press the power button to start screening.
The indicators and the alert are working, but no touch screen display.	<ul style="list-style-type: none"> • Touch the screen, as the touch screen backlight switches off after a time to conserve battery power. • If you are using the system in bright sunlight, you may need to increase the screen brightness so that you can read it easily.
The indicators and the alert are working, but the touch screen does not respond.	<ul style="list-style-type: none"> • If you can see the touch screen display but it does not react to touch, clean, or dry your hands or remove any gloves to check if this is causing the problem.

6.2 ALERT ISSUES

PROBLEM	TROUBLESHOOTING STEPS
<p>System alerts continually, or too frequently to screen people effectively.</p>	<ul style="list-style-type: none"> • Check if the screening operator (or any other person) is standing too close to the system and triggering the alert - to check this, ask the person(s) concerned to move slightly and see if this triggers an alert. • Check that the AC/DC power adapter is positioned at least 20 cm (8 inches) from the system. Placing the adapter at the rear of the base is acceptable but avoid placing the adapter or power lead close to the system. • Check there are no moving metallic objects close to the system - such as barriers or other equipment. If the system is located outdoors, check if the wind is moving any metallic objects near the system. • Check that the sensor unit is completely stable, and not physically moving at all. If the system is located outdoors, check if the wind is moving the system. • Check the location, you can try to rotate the system 90°, or move the system to a quieter location. • Reduce the sensor sensitivity setting slightly. This reduces the chance of unwanted alerts, but it also slightly reduces detection performance. If the unwanted alerts are causing the level indicator to light up two bars, reduce the sensor sensitivity setting by two levels. One bar is approximately the same as one sensor level.
<p>System does not alert on your test targets.</p>	<ul style="list-style-type: none"> • Move a mobile/cell phone or a known ferrous metal object close to the system and check the system alerts. • Check the sensor sensitivity is set to the correct level. If necessary, increase the sensitivity level (max = 10) and retest the system. • Check your test target contains ferrous metal, as the system is not designed to alert on non-ferrous metals like aluminum (including drinks cans), or silver/gold. • Detection performance depends on following the appropriate screening procedures for the system. Refer to the Installation Guide for details of possible factors affecting detection, such as distance from the system. <p>Note: An object must be moving for the system to detect it.</p>

6.3 BATTERY ISSUES

PROBLEM	TROUBLESHOOTING STEPS
When on battery power, the system does not appear to operate long enough between charges.	<ul style="list-style-type: none"> • Ensure the system is plugged into the AC/DC power adapter for long enough to fully recharge the battery in between use. • Check the charge level is over 80% at the start of the screening operation. • Set the touch screen to auto-dim mode - this adds approximately two hours to the operating time. • Reduce the alert indicator brightness to increase the operating time - do this by setting the brightness to a level where the red alarm level and blue zone indicators are clearly visible, but not brighter than they need to be. <p>Note: If you are operating the system outdoors in low temperatures (less than 0°C/30°F), the operating time is reduced when compared with indoor use.</p>
Battery charge level is not showing on dashboard screen.	<p>This typically means the battery is fully discharged. This can happen if the system has been stored for a long time, and the battery had a very low charge level when first stored. To recover the battery, leave the system plugged in to the AC/DC power adapter for a few minutes, and then turn on the system.</p> <p>If this situation occurs frequently, the battery may require replacing - contact Metrasens Service or Support department for assistance.</p>

6.4 AUDIT REPORT ISSUES

PROBLEM	TROUBLESHOOTING STEPS
Audit report takes a long time to display events.	If you choose to exclude detection events from the audit report, the system may have to filter through thousands of detection events to find each non-detection event. This delay on each page is normal.

6.5 ETHERNET CONNECTIVITY ISSUES

PROBLEM	TROUBLESHOOTING STEPS
IP address not displayed on the system information screen.	The IP address for any Metrasens Ultra system is only assigned when the system has been connected to an Ethernet network, or a laptop running the SMS application. Check that the Metrasens Ultra system is correctly connected to a suitable network, or device.

