



# MTC PROFESSIONAL

Instruction manual



# MTC PROFESSIONAL



## The revolutionary compact metal detector from Picosens

The completely new and revised edition of the MTC PROFESSIONAL offers you increased sensitivity and precision metal analysis with a metal detector that fits in your pocket.

The MTC PROFESSIONAL is powered by the patented AIS industrial technology. It enables the best detection sensitivity even in rough environments.

Special attention has been paid to the non-motion functionality (no need to swing to detect anymore), enabling the MTC PROFESSIONAL to be used in the private and professional world of target detection (e.g. test excavation).

Focus has been set on noble metals like gold, silver and copper.

## Free Android application

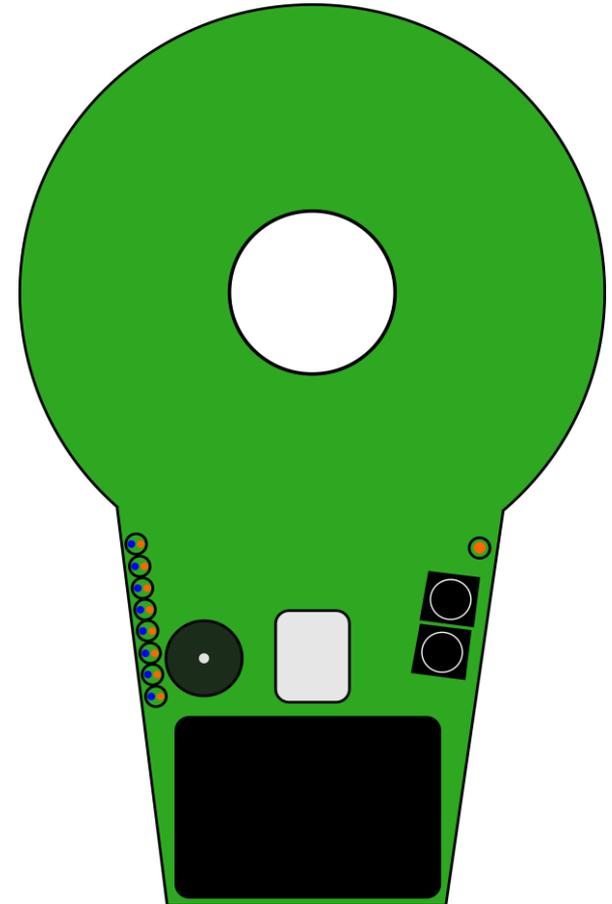
The application creates a brand new experience in metal detecting. Create yourself a picture of the ground beneath your feet, with its simple and intuitive user interface.

Finding and precise identification of metal objects has never been so easy.

**More info on the MTC PROFESSIONAL at [www.picosens.com](http://www.picosens.com)**

# Table of contents

Included in delivery	04
Installation of the shaft or rod	06
Control elements	07
Visualization elements	08
Commissioning	
- Installation of the batteries	10
- Turn ON/OFF	11
Detection modes	
- Static metal analysis	12
- Pipes and cables detection inside walls	12
- Outdoor metal detection	13
Cancel the effect of mineralized ground	14
Configuration of the detection sensitivity	15
Android App	17
Battery status	18
Technical data	19
Troubleshooting	20
Maintenance and care / Environment and disposal	21
Safety information	22



# Included in delivery – MTC PROFESSIONAL



MTC PROFESSIONAL



Instruction manual



3xAAA Batteries



Case



Rod adapter and wing screw

# Included in delivery – MTC PROFESSIONAL WS



MTC PROFESSIONAL WS



Instruction manual



3xAAA Batteries



Case

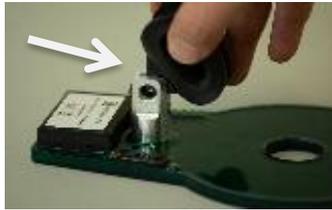


Optional: Trekking pole

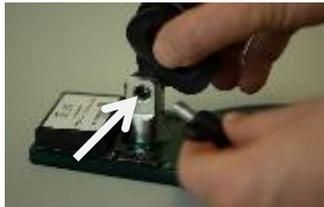
# Installation of the shaft or rod

## MTC PROFESSIONAL

1. Insert the rod adapter or a compatible shaft into the mounting slot.



2. Insert the wing screw and screw it tight in the preferred angle for the shaft or rod.



3. Insert the rod into the rod adapter.

**i** Rod diameter:  
23 to 26 mm



## MTC PROFESSIONAL WS

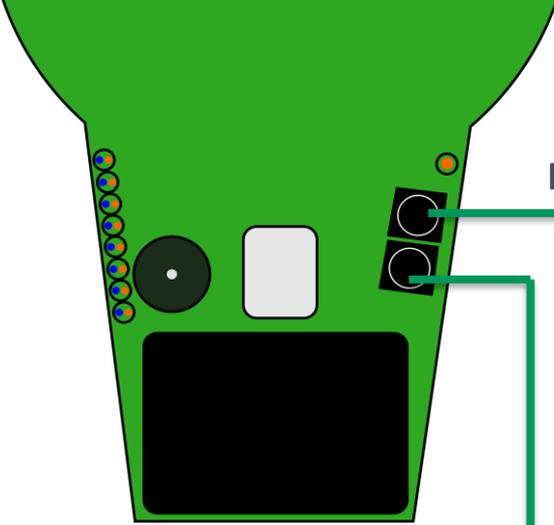
1. Remove the tip of your trekking pole.



2. Screw the trekking pole directly on your MTC.

**i** Screw thread:  
M5





Button 1



**Double click**  
ON/OFF



**Single click**  
Calibrate /  
Return to normal  
detection mode



**Long press**  
Display the status of  
the battery

Button 2



**Single click**  
Cancel the effect of  
mineralized grounds



**Long press**  
Go to sensitivity  
configuration

## Control elements



### Dual-Colored LEDs (blue/orange)

The dual-colored LEDs display the metal quantity or depth (number of LEDs lighting) and the material type identification (color of the LEDs).

Moreover, the dual-colored LEDs are used to see the status of the batteries and for configuration.



### Acoustic "Ping"

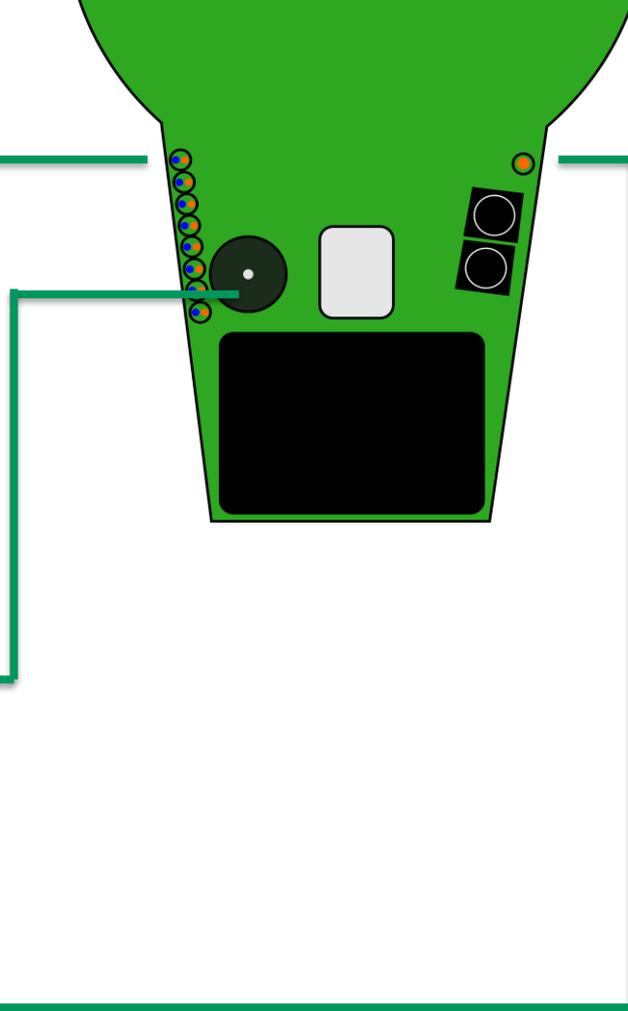
The acoustic feedback indicates the metal quantity or depth in increasing steps.



### Status LED

- - - **1 flash per second:**
- -- -- **double:**

Measurement without ground effect cancellation  
Ground effect is cancelled



## Visualization elements

# Visualization elements

## Dual-Colored LEDs

The amount of illuminated LEDs indicates the metal quantity (or depth).  
The color of the LEDs indicates the metal type.

### Default factory configuration:



#### Orange

Paramagnetic and diamagnetic nonferrous metals like brass, silver, gold, etc...

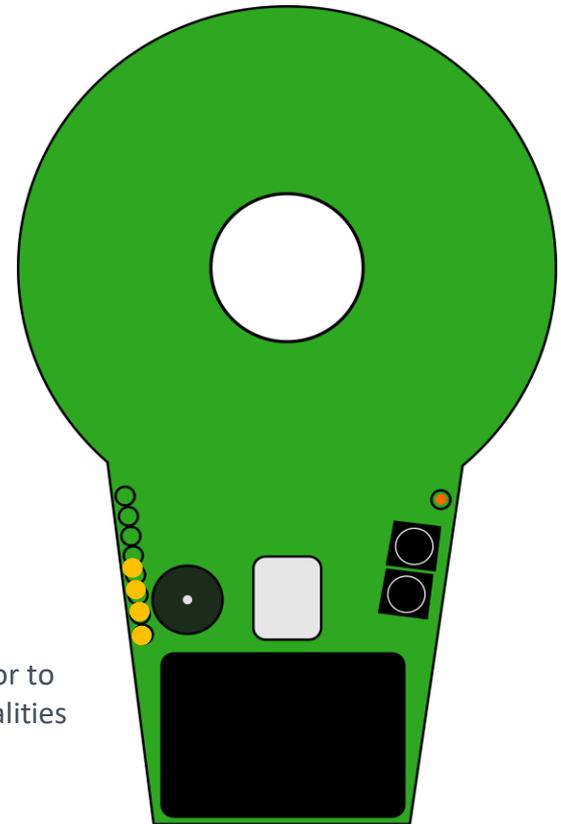


#### Blue

Ferromagnetic metals like iron, nickel, chrome etc...



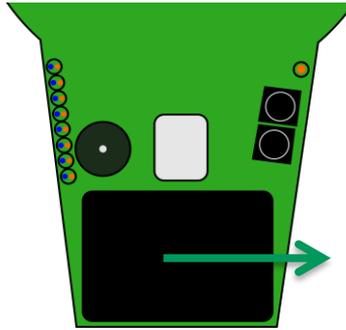
Using the free MTC PROFESSIONAL USER App, you can assign the orange color to your required type of metal. Find more information concerning the functionalities of the App on page 17.



# Commissioning

## Installation of the batteries

1. Remove the battery cover by sliding it to the right.



2. Insert the batteries (or rechargeable batteries) with the correct polarity and replace the cover again.



 Please only use high quality batteries.

 The batteries must not fall into the hands of children - Risk of swallowing or suffocation.

 Make sure you insert the batteries with the correct polarity.

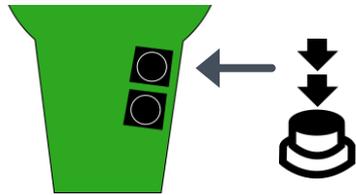
# Commissioning

Turn ON/OFF



## ON

1. Hold the MTC away from metal and ground.
2. Double click on Button 1.



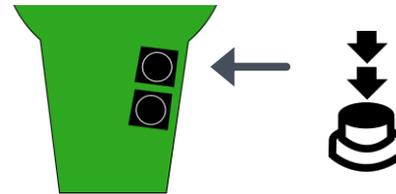
After 3 seconds, the LEDs will be turned off.



The MTC is now calibrated, and ready for detection. The status LED flashes 1x per second.

## OFF

Double click again on Button 1.



# Detection modes

## Static metal analysis

### Measurement without ground effect cancellation



The status LED flashes 1x per second.

(Automatic default configuration after startup.)

Use this detection mode in combination with your smartphone and the MTC PROFESSIONAL USER app to perform metal analysis.

In this mode the MTC PROFESSIONAL detects every type of metal and also mineralized objects (concrete, burned rock, ...)

**Best practice:** Place the MTC PROFESSIONAL on a metal free desk or table and start it.

Then approach a metal target to the MTC to analyze the type of the metal using the visualization possibilities of the MTC PROFESSIONAL USER app.

## Pipes and cables detection inside walls

### Measurement without ground effect cancellation



The status LED flashes 1x per second.

(Automatic default configuration after startup.)

**Best practice:** Follow the steps on page 16 to set the MTC PROFESSIONAL in „Special low sensitivity“ mode. Then move the MTC (as displayed below) perpendicularly to the wall.



# Detection modes

## Outdoor metal detection

### Measurement without ground effect cancellation

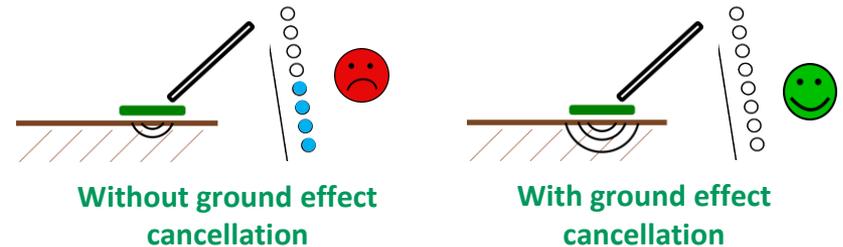
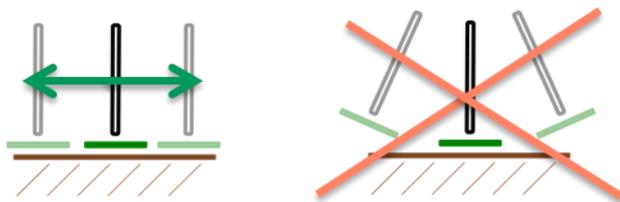


The status LED flashes twice per second.

Activation of ground effect cancellation: see next page.

**Best practice :** Activate the ground effect cancellation and move the MTC PROFESSIONAL parallel to the ground, without touching it.

You do not need to move fast (so you can have a precise localization of the target) since the MTC PROFESSIONAL, contrary to other metal detectors, does not need to be swung.



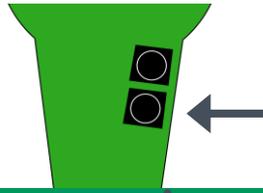
Because of its mineralization, the ground produces a signal that must be cancelled.

The MTC PROFESSIONAL has an embedded special “one click” ground effect cancellation algorithm, to cancel this effect without losing detection sensitivity.

**i** If the type of mineralization changes in the detection area, you can reconfigure the ground effect cancellation within a few seconds.

# Cancel the effect of mineralized ground

1. Hold the MTC in the air and click once on Button 2.



Button 2



2. After 1 second, the first and the last LED light orange.



1 second

3. Now bring the MTC as close as possible to the ground (without touching it).

The blue LEDs display the effect of the mineralization of the ground.

After 3 seconds, the LEDs turn off, and you are ready to detect without seeing any ground effect. The status LED flashes twice.

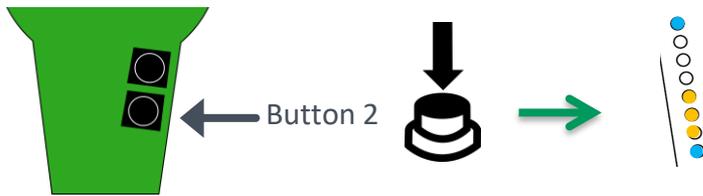


To deactivate the ground effect cancellation, click Button 1 once.

# Configuration of the detection sensitivity

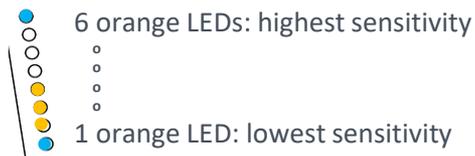
The detection sensitivity of the MTC PROFESSIONAL can be customized to the detection conditions and to your individual needs.

1. Press Button 2 for two seconds to enter the sensitivity configuration mode.

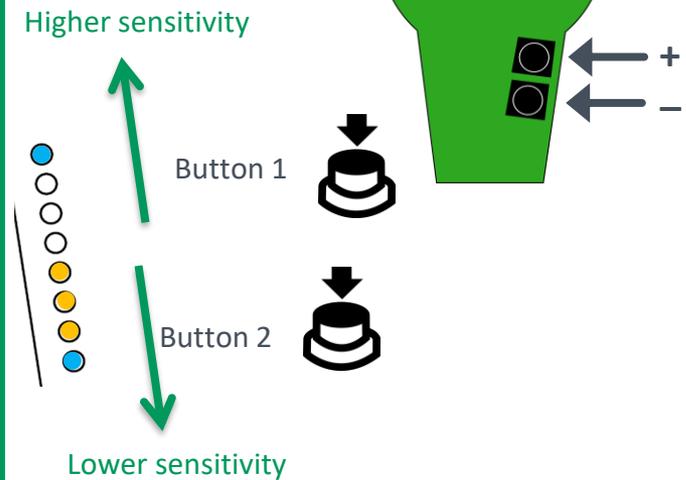


The first and the last LED light blue.  
The number of orange LEDs shows the actual selected detection sensitivity.

2. Release Button 2.  
You are now in sensitivity configuration mode.



3. You can control the sensitivity of the MTC by clicking on the button 1 or 2.



4. After 3 seconds without button action, the MTC saves the current selected sensitivity and goes back to detection mode.

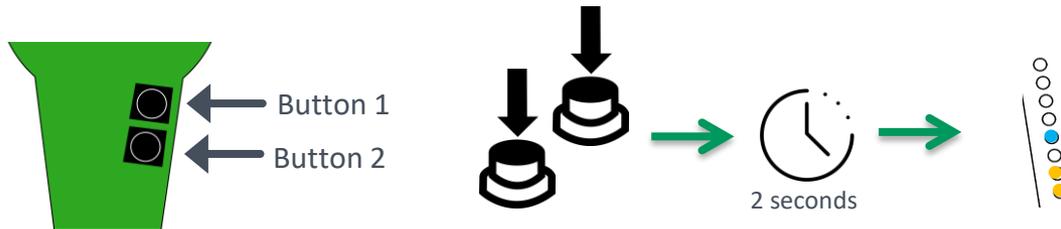
# Configuration of the detection sensitivity

## Special low sensitivity

To detect cables and pipes inside walls, the sensitivity of the MTC PROFESSIONAL is often too high and the measurement limit is quickly reached.

In this case you can reduce the detection sensitivity of the MTC PROFESSIONAL dramatically.

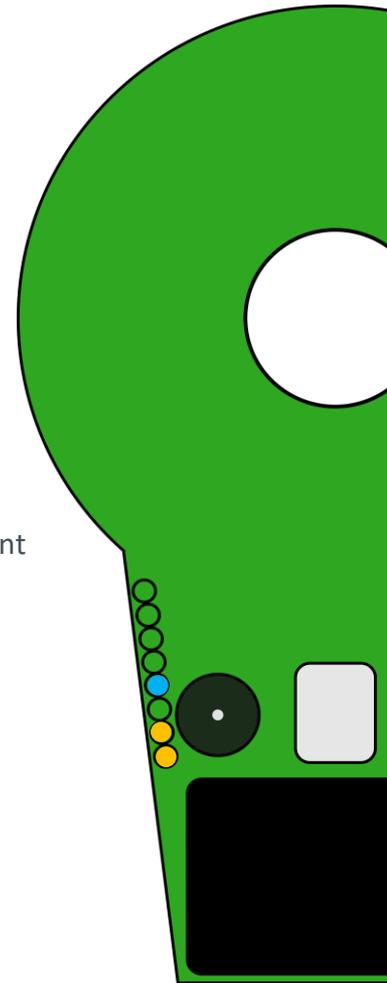
1. Press button 1 and 2 for two seconds simultaneously until the LEDs display 2 orange LEDs and 1 blue LED.



2. Release the buttons. The MTC PROFESSIONAL calibrates and the LEDs are turned OFF. You are now detecting with a special low sensitivity.



Measurement limit



To exit the special low sensitivity mode, click Button 1 once.

# Android App

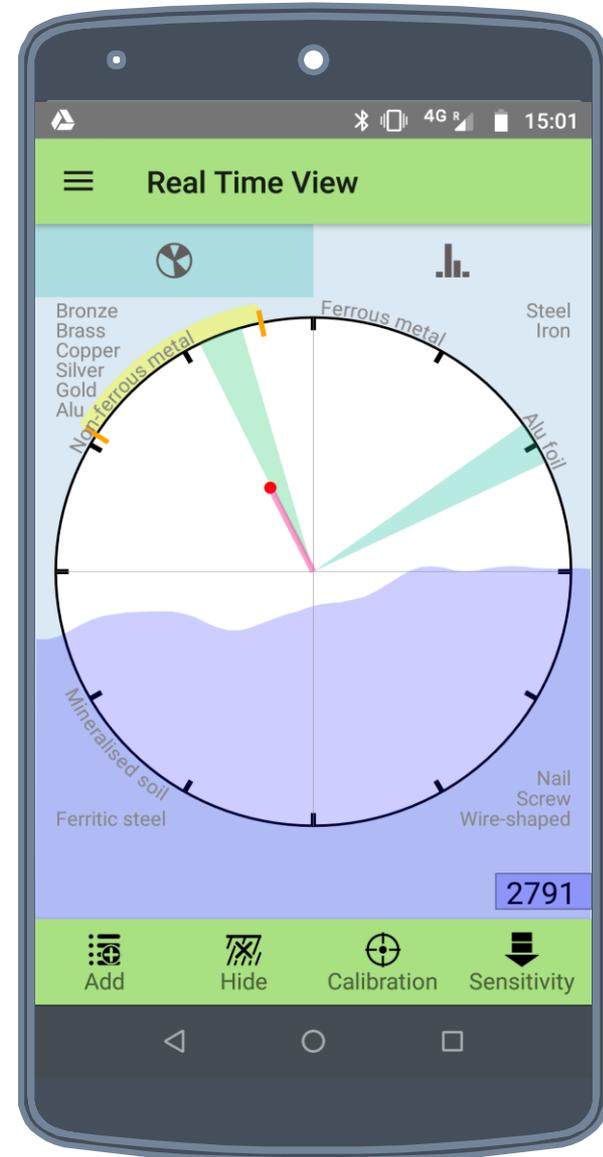
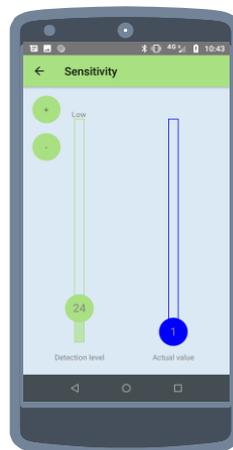
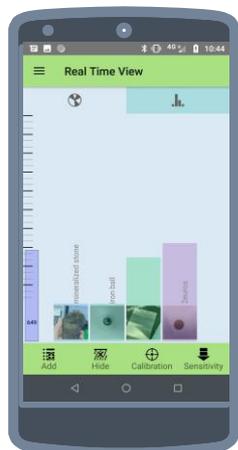


Install the MTC PROFESSIONAL USER app from the Google Play Store.

Search for: "MTC PROFESSIONAL USER"

Using the smartphone app, you enter the professional user mode and gain access to the complete functionalities of the MTC PROFESSIONAL, including an expert mode.

Benefit from a comfortable and user friendly interface, graphical display of material detection and enhanced analysis and configuration possibilities.



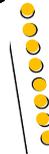
# Battery status

1. Press Button 1 and hold it pressed. After 2 seconds, the LEDs display the current battery status (the amount of illuminated LEDs informs you about the charge status of the batteries).



2. The MTC displays the battery status so long that Button 1 is pressed.

Release Button 1 to go back to the previous measurement mode.



8 LEDs :  
The batteries are full. You can detect for approx. 8 hours.



4 LEDs:  
The batteries have approx. 4 hours of energy remaining.



1 LED:  
You need to change the batteries soon.



Notice: When using rechargeable batteries the battery status may show less LEDs with fully charged batteries depending on the type of the rechargeable batteries.

# Technical data



## Temperature range

**Minimum** -20°C  
**Maximum** +50°C  
**Protection class** IP40



## Wireless communication

Bluetooth Low Energy (BLE)  
**Max. energy** 0 dBm  
**Max. distance** 5 m  
**Frequency** 2.402 - 2.480 GHz



## Batteries

3 x AAA (1.5V) alkaline batteries or rechargeable batteries\*.  
**Current consumption** 110mA  
**Battery life** >8 hours  
(\*Battery mAh > 880 mAh)



## Measuring principle

**Frequency** 99,8 kHz  
**Coil** Ventus-Technologie  
**Analysis** AIS vector analysis



## Android compatibility

**Android Version** > 5.0  
**Wireless comm.** BLE



## Dimension

**L x W x H** 195x130x 50mm  
**Weight**  
MTC PROFESSIONAL 224g  
MTC PROFESSIONAL WS 226g

# Troubleshooting



## Measurement limit reached

There is too much metal around the MTC. The measurement limit has been reached.

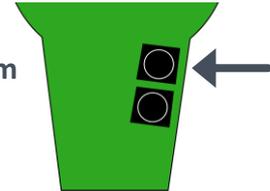
If necessary, use the “special low sensitivity” mode.



## LEDs are lighting without metal

The environment (metal, ground mineralization) of the MTC just changed.

Hold the MTC in the air (away from metal) and press Button 1 once to calibrate.



## LEDs stay OFF despite metal being close

Check the charge status of the batteries and **replace the batteries if needed.**

**Or:**

You may have disabled the LEDs and/or the beeper using the smartphone application.

**Activate the LEDs display.**



## Connection problem

You cannot open the connection between the smartphone and the MTC.

**Restart the MTC and restart the smartphone application.**

# Maintenance and care / Environment and disposal

## Maintenance and care

- The MTC PROFESSIONAL requires no maintenance.
- When not using the MTC for a long time, remove the batteries to avoid leakage.
- Please only use batteries of the same type.
- From time to time, clean the outside of the casing using a clean damp cloth.



- Do not use aggressive cleaning agents.

## Environment and disposal



- The MTC PROFESSIONAL contains 3x AAA batteries. These must be removed before disposal of the equipment.
- The batteries must not be disposed of with the household waste. They must be handed in to the specially equipped battery collection points.
- The electronics is to be handed in to a return point for household electronics for disposal.



All dealers who sell batteries are obligated to take back used batteries.

# Safety information



Risk of injury or death



Information on damage to property and the environment



General information



For your safety and to avoid damage, read the instruction manual and the safety information completely and keep them for future reference.



▪ Batteries can have harmful effects. If swallowed, seek medical attention immediately.

▪ Always keep the detector, batteries and accessories out of the reach of children.



▪ Leaking batteries can damage the detector. Therefore, if the detector is not used for a long time (over 30 days), remove all batteries.

▪ Batteries do not belong in household waste but must be disposed of properly.

▪ Always use fresh batteries of the correct size and specification and never mix old and new batteries.



▪ Avoid detecting in zones where battles are known to have taken place. Exercise extreme caution with any suspect object resembling munitions, grenades, mines, bombs, etc... Notify the relevant authorities of any such object you find.



▪ If the detector is damaged, stop using it.

▪ Never repair the detector and accessories yourself.

▪ If you have problems or damage, please first contact your dealer.



▪ When the MTC PROFESSIONAL metal detector is put into operation, it may affect the function of pacemakers or other sensitive electronic devices. In case of doubt, please contact the manufacturer or seller before use.

▪ The manufacturer as well as the seller are not liable for damage to health or material caused or generated by the improper and / or illegal use of the MTC PROFESSIONAL.

▪ Always adhere to the local, national and international laws.

▪ Always respect the rights and property of others.

▪ Never destroy historical or archaeological treasures. If you are not sure about the origin of a detected object, please contact a museum or an archaeological association in the region.

▪ Leave the plot of land as well as the vegetation in the condition in which they were when you arrived. Do not damage fences, walls or buildings. Fill in the holes you dig.

▪ Use the MTC PROFESSIONAL only on safe terrain.

▪ Never leave waste, but dispose of it properly.



▪ There is a potential danger to life when touching live cables or transformers.

**[www.picosens.com](http://www.picosens.com)**

---

Picosens GmbH  
Bußmatten 21, 77815 Bühl, Germany  
phone: +49 7223 80886 0  
e-mail: [info@picosens.de](mailto:info@picosens.de)