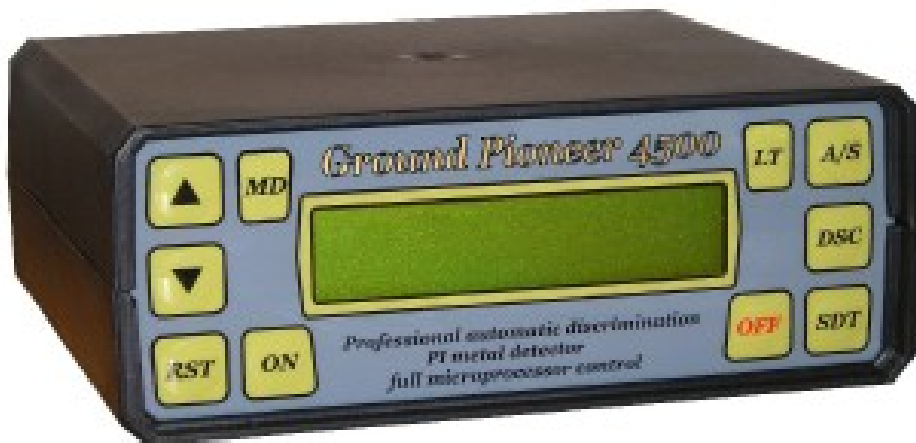


Pulse Induction Metal Detector



Ground Pioneer 4500

*help the users to find
deeper and easily
the location of the detected metal*

The Ground Pioneer 4500 is the pulse metal detector with great power plus all the major advancements of our previous discriminating pulse induction metal detectors. The **DIGITAL** Ground Pioneer 4500 is a composite detector not only for the reason that there is a build-in **MAGNETOMETER SENSOR SYSTEM**, but also by reason of that there is provided **RS 232 PORT** for connection to computer and GPS system for localizing and visualization of the buried object.



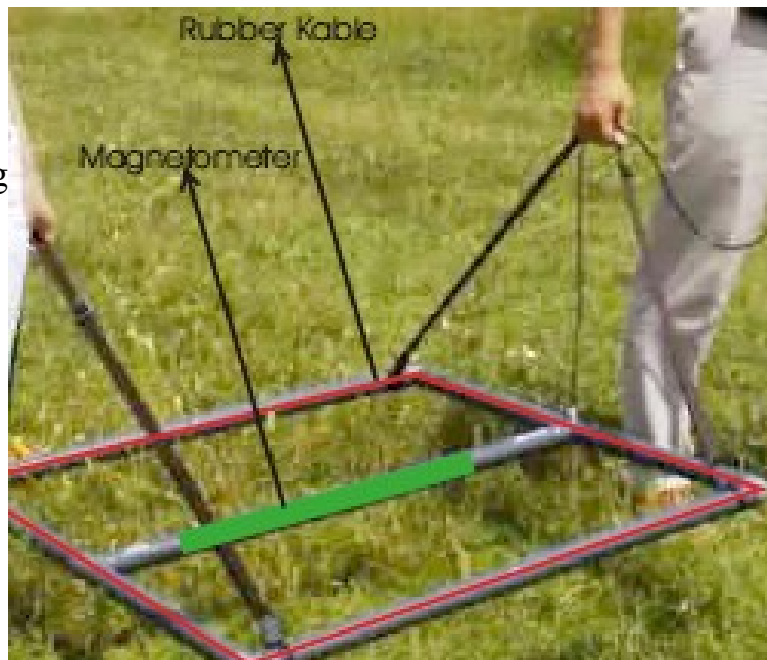
The Digital Ground Pioneer 4500 is designed for detecting deeply buried or lost metal objects, metal pipes, underground communication equipment, treasures and similar objects and can easily detect larger objects, buried up to 8 m deep, because the unit works by the principle of electromagnetic induction at a very low frequency, which allows penetration deeply in the ground.

So the Digital Ground Pioneer 4500 is good choice not only for the treasure hunters, but also for archaeological detection and geophysical prospecting. Target identification and discrimination by Ground Pioneer 4500 is possible with the **1/1 SQUARE SEARCH COIL(BASIC)**, embedded in PVC tubes:



But search coils with sizes **0,5/0,5m**; **1,5/1,5m** and **2/2m** also can be connected to the unit. Please note – all these coils have build-in Magnetometer Sensor System.

This helps you to discriminate out what targets are ferrous.
 With larger diameter coil even big areas can be searched quickly.
 With very large search coils Ground Pioneer 4500 penetrates deeper than it is usually possible with smaller coils.
 With the large search coils the very small metal pieces are ignored automatically !!!



What was registered by our **TEST** with 11” round search coil and 1/1m square search coil, made by the following tuning:

SENS=0 DELAY=0 THRESHOLD=10

NB!!! MAXIMUM SENSITIVITY of Ground Pioneer4500 is when **SENS=15**

DEPTH:
 11” search coil - 26 cm
 1/1 m search coil -



11” search coil - 29 cm
 1/1 m search coil -



11" search coil - 34 cm
1/1 m search coil -



11" search coil - 35 cm
1/1 m search coil -



11" search coil - 35 cm
1/1 m search coil -



11" search coil - 38 cm
1/1 m search coil -



11" search coil - 44 cm
1/1 m search coil -



11" search coil - 78 cm
 1/1 m search coil 145 cm



11" search coil - 110 cm
 1/1 m search coil 205 cm



Why for this test we have used 1/1 m search coil? The concentrated magnetic field of this coil allows an excellent detection range on relatively small metal objects. Targets the size of a cash box are clearly detected from a distances of 7 feet.

NOTE!!!When you want to compare the field test results of Ground Pioneer 4500 pulse induction metal detector with other well-known pulse induction units,you can look at the following metal detector [Comparision test:](#)

| COMPANY TYPE | TYPE HEAD (searchcoil or loop) | DEPTH AT WHICH A CAN OF SODA CAN BE DETECTED 12 x 6,5 cm - 78 cm2 | DEPTH AT WHICH A METAL GALLON JUG CAN BE DETECTED 400 cm2 | DEPTH AT WHICH A METAL 2 1/2 GALLON JUG CAN BE DETECTED 650 cm2 | MAXIMUM DISTANCE ABOVE GROUND FOR DETECTION FOR A METAL 2 1/2 GALLON JUG |
|--------------------------|--------------------------------|--|--|--|--|
| Gemini III Fisher | Two box detector | 45 cm | 70cm | 80 | Little signal strength more than 80 cm |
| TM 800 White's | Two box detector | 40 cm | 65 cm | 70 | Weak signals at more than 75 cm |
| TF 900 | Two box | 45 cm | 65 cm | 75 | maximum at 120 |

| Discovery | detector | | | | cm |
|-------------------------------|---|-------|--------|----------------------------------|---|
| | | | | | |
| Série CX Garrett | Two heads depth multiplier | 40 cm | 55 cm | 65 | Little signal strength at more than 65 cm |
| Deepstar ** | Round Searchcoil | 42 cm | 60 cm | No signals further than 80 cm | |
| Pulse Star II *** | Loop 1 m x 1 m | 48 cm | 85 cm | 115 cm | 160 cm |
| MD8 *** | Elliptical head | 48 cm | 85 cm | 90 cm | No signals further than 90 cm |
| Lorenz 5 **** | Loop 1.25 m X 1.25 m | 50 cm | 95 cm | 120 cm | 140 cm |
| | | | | | |
| Deepers 10 DD ***** | Elliptical searchcoil of 20 x 40 cm Super Sensitive | 65 cm | 120 cm | 140 cm | 180 cm (with loop) |

The square search coils with size 1/1 m; 1,5/1,5 m; 2/2 m can be assembled for use or dismantled for transportation easily and quickly.

Note! Only the 0,50/0,50 m search coil in PVC tube can not be dismantled.

Searching with large search coils (1 m and large) is easy, when the coil is carried

by two people with the help of supplied straps. The search coil should be held approximately 10 to 20 cm. from the ground while searching.

The pinpointing of the burried object with Ground Pioneer 4500 can be achieved with area of **ROUND SEARCH COIL**:





5" SEARCH COIL



11" SEARCH COIL



15" SEARCH COIL

What round search coil to choose, when you purchase Ground Pioneer4500? This is the most popular question. It is well known that the larger search coils give better depth for larger targets and better ground coverage. But the sensitivity to smaller objects may be sacrificed. The smaller search coils offer greater sensitivity to smaller objects and improved target separation in trashy areas.

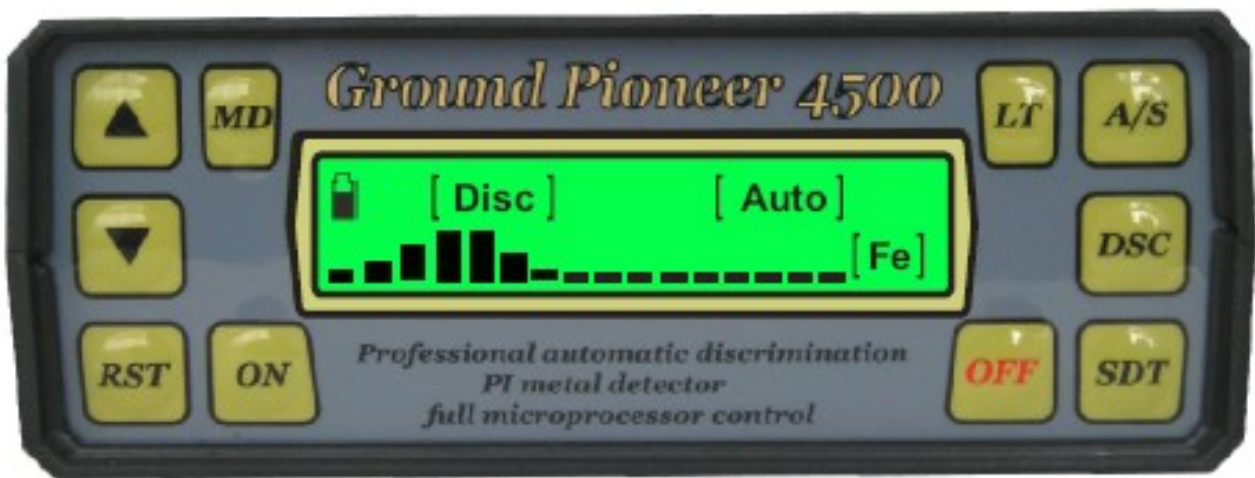
An alternative search coil for Ground Pioneer4500 is the **CABLE COIL** with size 2/2 m. We gave this search coil the name "universal", because she can work with all our pulse induction



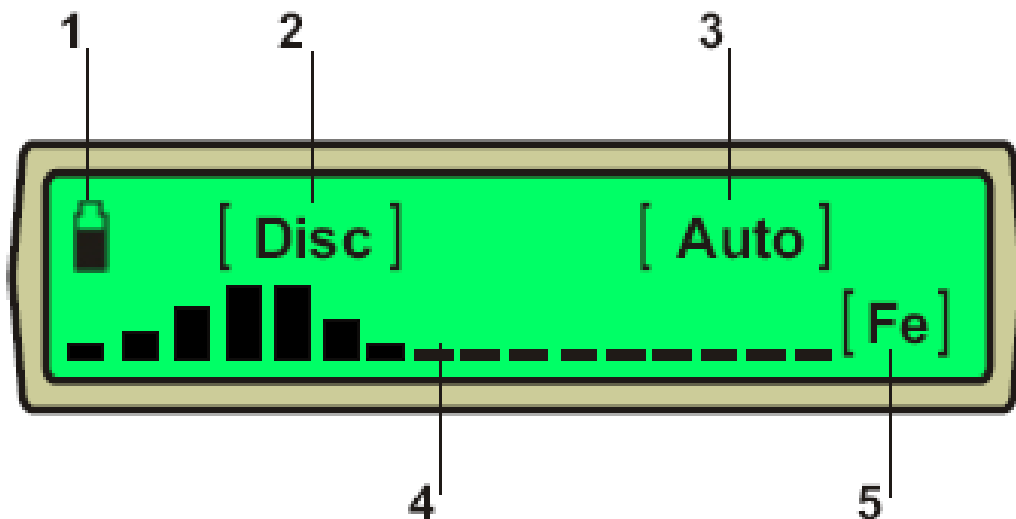
detectors, independently of this whether or not they are discriminating detectors. Also this search coil offers **FIVE** more **ARRANGEMENTS** to suit your search needs. This search coil can be arranged as 0,50/0,50; 1/1 m; 1/3 m and 2/2m coils by fastening the windings on free frame (from PVC for example) with tape. It can also be arranged in form as "eight". Why we recommend this coil when you purchase Ground Pioneer4500? With this coil we have registered **15% AND MORE DEPTH** for big objects by its test in comparison with the standart square search coils. But Note!!! This coil is **UNDISCRIMINATING**.

GROUND PIONEER 4500 -CONTROLS:

FRONT PANEL



LCD DISPLAY:



FUNCTIONAL FIELDS OF LCD DISPLAY:

1. INDICATOR FOR THE BATTERY CONDITION.

It is recommended that the supply of the storage battery to be done before the indicator shows a completely dead battery.

Ground Pioneer 4500 comes to you in version with an external accumulator system for its switching in the device. The supply system and the battery are integrated in this system (including the supply from an automobile accumulator).

The battery of Ground Pioneer 4500 is rechargeable 1,3(2,3-optional)Ah, hermetic acid Battery and allows premature supply not affecting its work.

The battery charging time (for empty battery) is max.10 hours.

The battery supplied with your detector comes in charged condition.

It is not necessary to charge the system before the first time you start work with Ground Pioneer 4500. But we recommend checking its condition and when low battery condition is indicated, you should immediately recharge the battery.

Please, Note: the external accumulator system could not be charged from the unit.

2. INDICATION FOR THE DISCRIMINATION REGIME.

Ground Pioneer 4500 can work in two regimes of discrimination – with or without sound discrimination.

In this field it is indicated which of these two regimes you may choose for the work.



This symbol appears when you are in regime with sound discrimination



And this - when you will work in regime without sound discrimination

Note!!! The microprocessor “remembers” the condition of the device when it is switching off.

3. INDICATOR OF THE REGIME OF AUTOTUNING TO THE SOIL CONDITIONS:

When in field (3) appears symbol **AUTO** you are in regime for constant setting up to the soil changes and autoreset after every registered object by the device .

When in field (3) appears symbol **SEMI** you are in semiautomatic regime. Handset to the changes in the soil and autoreset after every registered object.

Note!!! The microprocessor “remembers” the condition of the device when it is switching off

4. INDICATOR OF THE INTENSITY OF THE SIGNAL.

5. INDICATOR FOR THE KIND OF THE METAL.

When the unit indicate ferrous object, appears the Symbol



in the field (5).

This indicator is independent from the condition of field (2) – that is to say- independent from this if you work in regime with or without sound discrimination the symbol Fe appears when ferrous object is indicated.

FUNCTIONAL BUTTONS OF FRONT PANEL AND HOW TO WORK WITH THEM

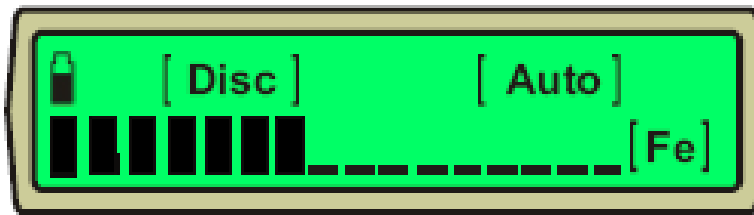


SWITCH ON BUTTON


Five seconds after pressing this button on the display appears the greeting logo and the device is ready for work:

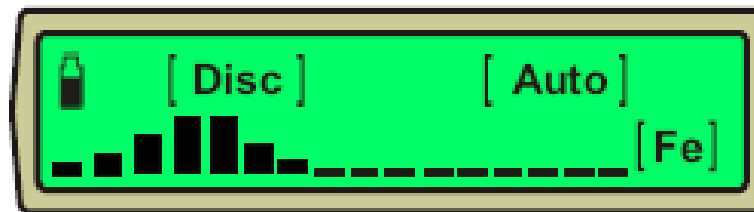


After that you can choose between two different graph regimes. When the device is switched on implicitly it is in a regime **LEVEL MODE**:



It shows the battery condition and current settings of Ground Pioneer 4500. Because this pulse induction detector is designed to memory the last settings, the microprocessor “remembers” the condition of the device when it is switching off.

Pressing the button  you choose the regime **GRAPH MODE** for your device:

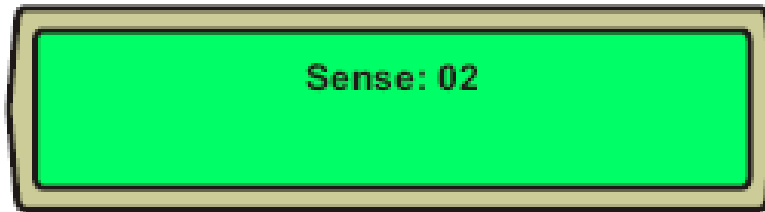


Now you can choose the suitable parameters for work with the detector. The functions **SENSITIVITY**, **DELAY** and **THRESHOLD** are controlled from the button of the device.



The **SENSITIVITY** level alters how responsive the detector is to signals received from the search coil. The higher the Sensitivity level, the more responsive the detector. With **FIRST PRESS** on the button appears the symbol **SENSE** on the LCD display. The Sensitivity values are only

adjustable in the range 0-15:



By pressing  or  buttons you can increase or decrease

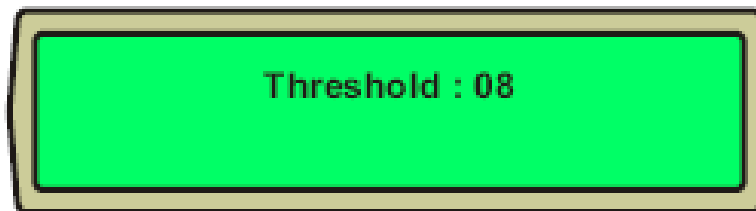
the values of the Sensitivity. Heavy ground mineralization, nearby radio stations or power transformers are reasons to lower the value of Sensitivity.

By **SECOND PRESSING** on the button **SDT** the symbol **DELAY** appears on the LCD display:



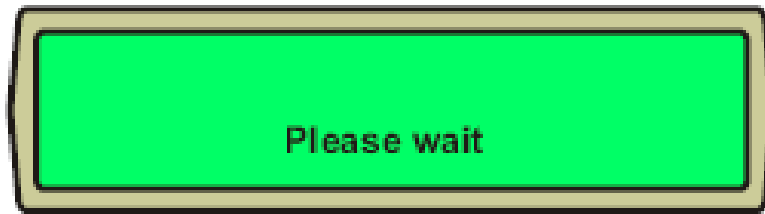
As by Sensitivity control by pressing on the two buttons on the left side of the Front panel you can increase or decrease the values. The Delay values are also adjustable in the range 0-15. For beaches and very light soil minerals you can choose the low value for the Delay. For standart or general operating conditions – middle values. When you work in heavy mineral ground or when you search very deep and large targets you can choose high values.

By **THIRD PRESSING** the symbol **THRESHOLD** appears on the LCD display:



The values are also adjustable in the range 0-15. The **SOUND THRESHOLD** is used to ground balance the detector. By heavy mineral ground you use the low levels.

By **FOURTH PRESS** on **SDT** button you go out from the regime “setting-up” and the symbol **PLEASE WAIT** appears on the display:



Five seconds after its disappearance the work with the device can go on.

As we mentioned before Ground Pioneer 4500 can work in two regimes of discrimination – with or without **SOUND DISCRIMINATION**. You can choose

these regimes by pressing on



button. Independently of whether you

work in regime with or without sound discrimination the symbol Fe appears when ferrous object is indicated.



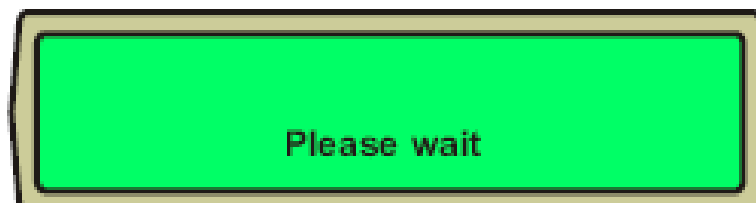
Another button on the display of Ground Pioneer4500 is the button for the choice of search regimes – **AUTO** or **SEMIAUTO**. Automatic mode is motion detection. The search coil needs to be moved completely through the target area. The Ground Pioneer 4500 retunes automatically of the ground conditions (mineralization).

Semiauto is “no motion” regime. The setting-up is done by button

RES.



Button to **RESET** control unit in new ground conditions. Depressing button one or more times is needed in each new target area or if any other settings are changed. Pressing reset over metal will ignore similar metal targets. The unit needs to be reset over a clear area (not on targets), not including minerals in ground. After pressing the Reset button appears the symbol “Please wait”:

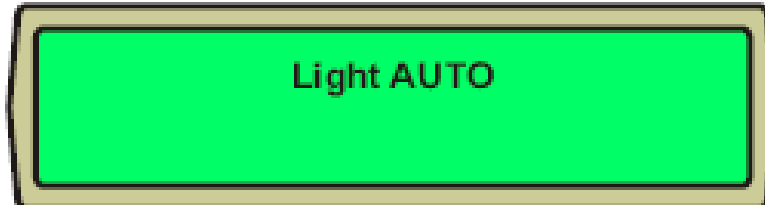


Five seconds after its disappearance the work with the device can go on.



LIGHT button of LCD display. It works in three regimes. You can choose any of these three regimes by pressing the button.

AUTO – The device is started always at this rate:

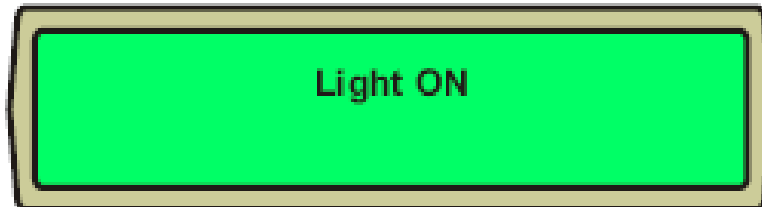


After pressing any functional button the light appears in five seconds.

OFF - The light is constantly switched off:



ON - The light is constantly switched on:



When you choose this regime you must not forget that the voltage of the batteries will decrease quickly.

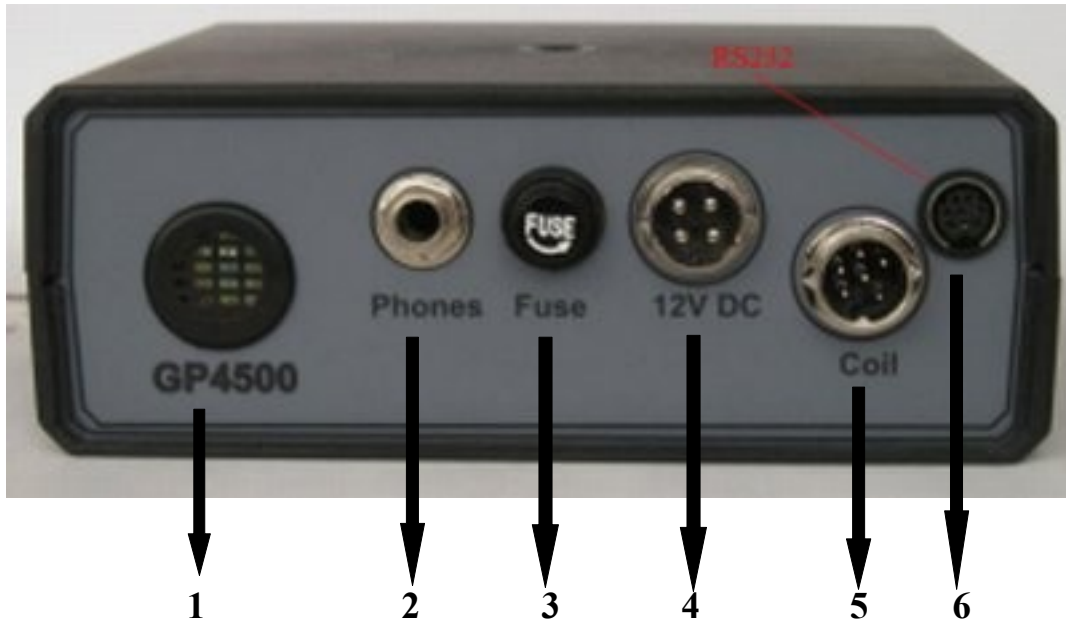


After pressing this button for a few seconds sound signal is heard and the sign “shutdown” appears:



And then the device turns off.

BACK PANEL:



1. Build-in loudspeaker.
2. Jack for headphones Mono/32 om.
3. Safety fuse – 1A. Ground Pioneer 4500 is protected against feedback.
4. Supply jack for external accumulator.
5. Connector for search coil.
6. RS 232 port.

TECHNICAL CHARACTERISTICS:

Working voltage:12V.

A RS 232 port is provided for connection to computer and GPS system for localization.

Baudrate: 19200

Databits: 8

Stop bits: 1

Com port setup: 19200 8n1

Raw data format direct from ADC

Continuous power consumption:min 240mA (with no sound and light).

Pick power:>250 W.

Maximum power consumption:280 mA.

Working Frequency:100 Hz.
Sound Range:0,1Hz-6,5kHz.
Battery:Rechargeable 1,3(2,3-optional)Ah,hermetic,acid Battery.
Charger input (adapter):100/240V 50/60 Hz/AC
Charger output:14.6 VDC 500mA .
Battery Charging Time(empty):Max.10 hours.
Full Microprocessor Control.
Automatic Ground Balance.
Auto Tracking.
Manual Tuning.
Delay control.
Graphic Mode Analyzing Target.
Display:20/2 LCD module with back light with three mode.
All metal/No-Motion mode.
Audio and Visual Discrimination Mode(by built-in Magnetometer-Sensor System).
Depth Control for Maximized Detection Depth.
Reset controls for easy operation.
Headphone input:1/4" Mono Jack.
External Power Supply.
Protection against reverse polarity.
Optimal Temperature Range:-10 to 50 Degrees C.

Limited Warranty Information

DeepTech warrants your consumer or industrial product against defects in material or workmanship for a period of two years on the electronic box and one year for the search coils from the date of purchase.If DeepTech determines the product to be defective in materials or workmanship,DeepTech will replace or repair the product to the original purchaser only.

Any alternation of the electronic circuit by an unauthorised person will lead to breach of warranty.

This warranty does not cover damage due to a fall,shock and accident; deteriorations due to an anormal use; cable breakage of the search coils or of one of its conductors.

If warranty service should be necessary, the detector must be returned complete with proof of purchase and a notice explaining the fault.

DeepTech reserves the right to change the design or specifications of its detectors without notice.

