

Trace₂o

METALYSER DELUXE HM2000

Upgrade Kit - Metalometer

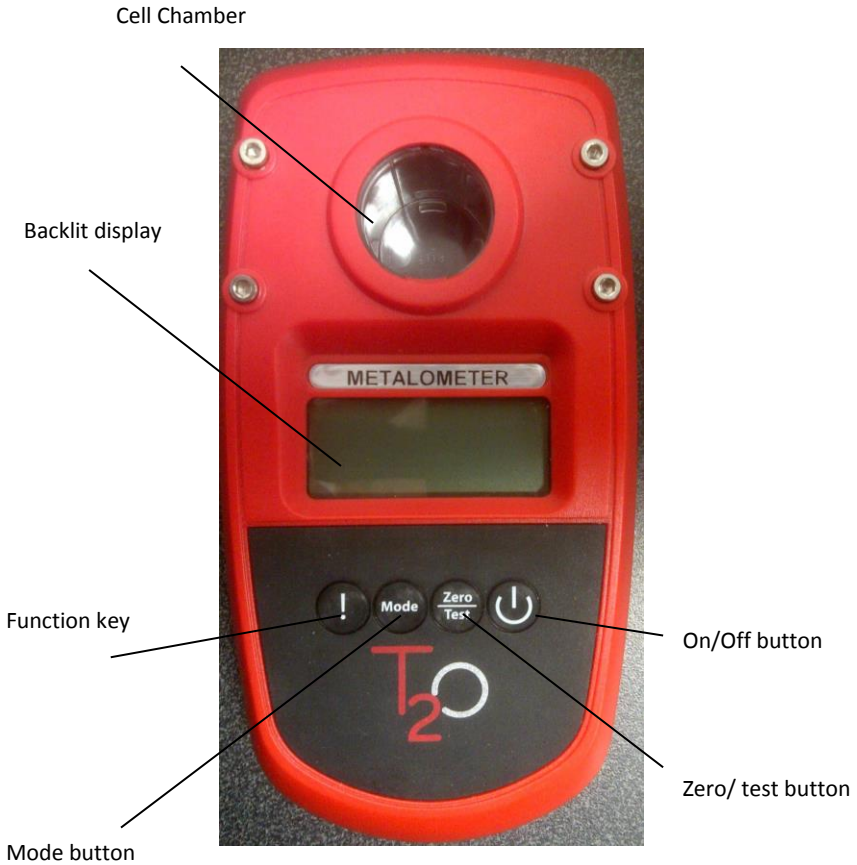


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1. METALOMETER

1.1 GETTING TO KNOW YOUR METALOMETER



LCD display

The LCD display displays the test method, countdown timer and result. There is also a backlight activated by pressing the  button.

ON/OFF Button

The ON/OFF is used to turn the instrument on and off.

Mode Button

The Mode button is used on its own to select the metal to be tested or can be used in conjunction with other buttons to activate other features which will be described later.

Zero/Test button

This button is used to take readings of the samples.

Function button

This button is used to activate the backlight as well as performing other functions which will be described later.

Components and care of components

Glass vials :

To ensure the best accuracy the vials used should be clean and free of marks, scratches, fingerprints etc.. They should be washed thoroughly in tap water and then rinsed with de-ionised/distilled water to remove any traces of tap water.

Instrument:



The instrument requires very little maintenance but the cell chamber should be inspected regularly to ensure there are no traces of dirt in it or water which will affect the readings. If cleaning is necessary the chamber can be rinsed under a tap and dried using a soft cloth.

The rest of the instrument can be cleaned using a mild soapy solution. For difficult to remove marks Iso-propyl alcohol can be used.


1.2 GETTING STARTED




The Metalometer requires 4 x AAA Alkaline batteries which come pre-installed. If these require changing see the section on battery replacement.


Setting the date and time.

Press and hold  then turn on by pressing 

When the instrument displays . . . release the keys.


The screen should show  diS

Press  twice, PRT will be displayed followed by  

Next press  The display will show 'set' for 3secs and then display the year. To set

the date the keys perform the following functions:

-  Increment
-  Advance sequence
-  Decrement

The date and time set sequence is , YYYY, MM, DD, hh, mm. After the next press of  the instrument will move on to the test method screen.

1.3 PERFORMING A TEST

The Metalometer uses the photometric analysis technique. The principle is to add a reagent to a sample of water which will react with the metal of interest and produce a colour change which is related to the concentration of the metal in the sample. This colour change is then measured by passing a fixed wavelength lightsource through the sample and detecting the amount of light which is transmitted through the sample. This transmittance of the sample is matched against a fixed calibration curve already programmed into the instrument.

To select a test method, turn on the instrument by pressing

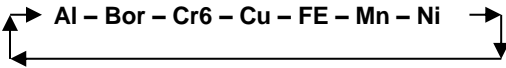


The instrument will show initially Al and then the last metal selected thereafter.

To change the test method press.



The instrument will sequence through the test methods as follows:





To perform a test for a particular metal please consult the individual application notes.

1.4 RESULTS


The instrument displays the results on the screen and will store them automatically with a data and time stamp in the one of the 16 memory locations. Once the memory is full the next reading will overwrite the first, the next the second and so on.

To recall the results enter the set-up menu :

Press and hold  then turn on by pressing 



When the instrument displays . . . release the keys.


The screen should show ↑ diS

Press the  button. No1 will be displayed.

If left the instrument will cycle through the following information for result no.1

Year, Month and Day, time, Metal, result.

To repeat press  To move to the next result press. 

To exit press 

1.5 TROUBLESHOOTING

Whilst your Metalometer is designed to be very reliable, occasional problems may occur throughout its working life. The following tables are intended to help you diagnose and resolve these problems simply and quickly. Should you not be able to resolve the problem please contact your supplier and they will be able to assist you.

Problem	Probable Cause	Solution
Hi	The metal concentration is above the maximum limit of detection.	Dilute the sample.
Lo	The metal concentration is below the minimum level of detection	
Result higher than expected	Cell chamber or cell dirty	Clean chamber and cell
	Turbidity present in sample	Filter sample
Result lower than expected	Reagent not fully dissolved	Shake sample and check all reagent is dissolved
	Time not elapsed for timed tests.	Allow time to elapse
	Zero sample was turbid, dirty or coloured.	Clean sample vial and refresh sample

1.6 INTERFERENCE EFFECTS

The Metalometer has been designed to test very low levels of metals in water and as such is very sensitive. Due to the interaction of other metals and organics in the water source, interferences can occur as with any system of this type. For further information on the most common interferences please consult the application notes for each metal.

1.7 SPECIFICATIONS

Metalometer HM2000 Handheld Unit

Input Power 6 V DC 250mA (4x AAA Alkaline batteries)

1.8 PARAMETERS

	Parameter	Lower Limit ⁺	Upper Limit [*]
Aluminium	Al	10	250
Boron	B	100	2000
Chromium VI	Cr(VI)	20	2000
Copper	Cu	50	5000
Iron	Fe	20	3000
Manganese	Mn	100	18000
Nickel	Ni	100	10000

Accuracy $\pm 5\%$.

NOTES



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