

# Palintest<sup>®</sup>

*Leaders in Water Analysis Technology*

## **MACRO 900 WATER QUALITY SYSTEM**



### **Quick Start Guide**

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## **1. PACKING LIST**

Congratulations on your purchase of the Macro 900 Water Quality System from Palintest Ltd. The items contained within your case are as follows:

- Macro 900 Meter
- Quick release lanyard
- Screwdriver
- Five 'AA' batteries
- Compact disc containing Macro 900 Link software and full manual
- USB lead
- MAP 2000 or MAP 2100 probe
- Calibration and storage solutions
- Spare bottle for rinse
- Protective sleeve cap
- Silicone grease
- Warranty and registration cards for meter/probe
- A connector cable of either 3, 10, 20 or 30m

Additional optional optical and ion selective probes will be provided separately for field installation.

## **2. CONNECTING THE PROBE**

The MAP 2000/2100 probes are connected to the Macro 900 Meter via a high integrity, waterproof connector.

Prior to first connection lubricate the seals in the cable with silicone grease. Also grease the thread on the MAP 2000/2100 collar.

Line up the 'Palintest' logo with the white mark on the MAP 2000/2100 probe and tighten the blue cap to hand-tight.

With the Macro 900 Meter **switched off** connect the other end of the cable to the meter by aligning the 'Palintest' logo with the ON/OFF button.

**Always connect the probe to the meter with the meter switched off.**

Switch the meter on and the probe will be recognised and standard parameters loaded automatically.

### **3. INSTALLING OPTIONAL PROBES**

Install the optional probes into the MAP 2000/2100 body by unscrewing the protective collar and inserting.

**Install ISE probes into AUX2 only, optical probes into AUX1 only.**

Switch on the Macro 900 Meter, press MENU and select the SET-UP & INSTALL menu followed by SOCKET ASSIGNMENT.

Use the up/down keys to select the socket to be assigned and press right.

Scroll down to select the probe name defined in the tables overleaf:

## AUX1 OPTICAL PROBES

<b>PART NO.</b>	<b>PARAMETER</b>	<b>METER NAME</b>
PT 1551	TURBIDITY	TURB
PT 1552	BLUE GREEN ALGAE (FRESH WATER)	BGA-PC
PT 1553	BLUE GREEN ALGAE (MARINE WATER)	BGA-PE
PT 1554	RHODAMINE WT DYE	Rhod
PT 1555	FLUORESCEIN DYE	Fcein
PT 1556	CHLOROPHYLL	Cphl
PT 1557	REFINED OILS (HYDROCARBONS)	OIL

## AUX2 ION SELECTIVE ELECTRODES

<b>PART NO.</b>	<b>PARAMETER</b>	<b>METER NAME</b>
PT 1541	AMMONIA/AMMONIUM	NH4
PT 1542	NITRATE	NO3
PT 1543	CHLORIDE	Cl
PT 1544	CALCIUM	Ca2
PT 1545	FLUORIDE	F

## **4 MACRO 900 METER SETUP**

With or without a probe connected switch on the Macro 900 Meter using the red ON/OFF button.

Press the MENU key and scroll down to select Setup and Installation. Press right.

Scroll up/down to select the item to setup and press right. Items within the setup area are:

- Time and date – set the time and date
- Units – choose from three selections to define the presentation of units on the meter and the downloaded data.
- Language – English, French, German, Spanish
- Socket assignment – for connection of optional probes

To return to the main screen press ESC or wait for the meter to revert automatically.

## **5 TAKING READINGS**

The MAP 2000/2100 are designed for full immersion up to 30m or partial immersion with a minimum of 75mm.

Remove the protective cap from the pH/ORP sensor and simply insert the entire probe into the sample ensuring the minimum insertion is respected.

The electrodes/probes are designed to operate in difficult environments and are protected by an aluminium body. A further end-cap is included to prevent damage from objects entering from the base of the probe.

Data will be shown on the screen in real time. Scroll through the screens using the left or right arrows to see the full data. Arrows against a parameter will show the trend of a result.

When data capture has completed remove the probe, clean and replace the protective cap over the pH/ORP electrode.



## **6. STORING DATA**

The Macro 900 can store 1000 full sets of data plus GLP calibration data.

To manually store results while taking readings press the M+ key. The address of the data will be shown on screen and can be used to recall the data using the MR key.

The Macro 900 can automatically store data at a user-defined frequency ranging from 1 – 59 minutes.

To set automatic logging press MENU and scroll down to Auto Data Logging. Press OK and, in the next screen, set the interval using the up/down arrows and switch the Status to ON.

An asterisk will flash on the parameter screen to indicate this mode is active. This mode also overrides the power-save functionality of the Macro 900 Meter.

## **7. MACRO 900 LINK SOFTWARE**

The Macro 900 Water Quality System is provided with a CD containing the Macro 900 Link software, USB drivers for the Macro 900 Meter and a full instruction manual.

Place the CD in the drive and allow the AUTORUN install the software automatically.

To use the Macro 900 Link utility start the software and connect the USB lead to the computer. Connect the other end to the meter and the Macro 900 meter will display the message USB CONNECTED.

In the screen of the Macro 900 Link Software a number of options are present to the user:

- Upload a data file from Macro 900 – this imports data into the software
- Open raw data file – this opens the data file in the instrument format for manipulation
- Save as raw data file - this opens the data file in the instrument format for

future manipulation

- Export as Excel File – exports the uploaded data in Excel format
- Export as a Google File – exports the uploaded data for use with Google Maps or Google Earth
- Export as a Text File – exports as a text format file

The data that can be selected for export is chosen from the list in the left-hand panel. Data can be selected individually or the full list. Individual data points can also be selected and full data report is shown in the main screen with date of last successful calibration.

## **8. MAINTENANCE AND CALIBRATION**

The Macro 900 Meter does not require routine maintenance beyond change of batteries.

The MAP 2000/2100 probes contain pH, ORP, conductivity and Dissolved Oxygen sensors as standard.

All probes can be calibrated individually or, for convenience, a single field calibration MACROCAL solution is provided for pH and conductivity in a convenient wide-necked bottle.

Optional probes will require calibration as detailed within the specific probe manuals contained within the CD.

pH and ORP electrodes must be stored with the protective cap in place to prevent the electrode from drying out. Optical DO caps will require replacement approximately every two years.

## **9. WARRANTY AND SUPPORT**

The Macro 900 Meter is supplied with a three year warranty. Register your purchase using the included card to ensure access to product updates and priority assistance.

The MAP 2000/2100 Probes have a warranty of one year

pH, ORP and Ion Selective Electrodes have a 6 month warranty from installation.

Warranties exclude damage due to misuse, abuse or accidental damage.

For technical assistance please contact your supplier or the Palintest Technical Support Team via the following:

Website: [www.palintest.com](http://www.palintest.com)

Email: [service@palintest.com](mailto:service@palintest.com)

Telephone: +44 191 491 0808

Fax: +44 191 482 5372

## **APPENDIX 1 SPECIFICATIONS**

### **Macro 900 Meter Specification:**

(H x W x D):	180mm x 90mm x 39mm
Weight:	450g (inc. batteries)
Power supply:	5 'AA' cells
Battery life:	>40 hrs (NiMH)
Operating Temp:	-20 - 70°C
IP Rating:	IP 67
GPS data:	±10m in three dimensions
Atmos pressure:	150 – 1150 mb ± 1 mb

### **MAP 2000/2100 Generic Specification:**

(L x D):	290mm x 48mm
Weight:	725g
IP Rating:	IP 68
Immersion:	75mm min to 30m max
Operating Temp:	-5 - 50°C

## **APPENDIX 2 PARAMETERS**

Standard parameters:

MAP 2000 – pH (mV), ORP, Dissolved Oxygen (Optical), Conductivity, TDS, Resistivity, Salinity, Seawater Specific Gravity, Temperature

MAP 2100 - pH (mV), ORP, Dissolved Oxygen (Optical), Conductivity, TDS, Resistivity, Salinity, Seawater Specific Gravity, Temperature, Depth

Optional Parameters

Optical – Turbidity, Chlorophyll, Blue Green Algae (fresh water), Blue Green Algae (marine water), Rhodamine WT, Fluorescein, Refined Oil

Ion Selective Electrodes –  
Ammonia/Ammonium, Chloride, Fluoride, Nitrate, Calcium

