



**SPECIALIST
MANUFACTURERS OF
ENVIRONMENTAL ANALYSIS
AND MONITORING
EQUIPMENT**

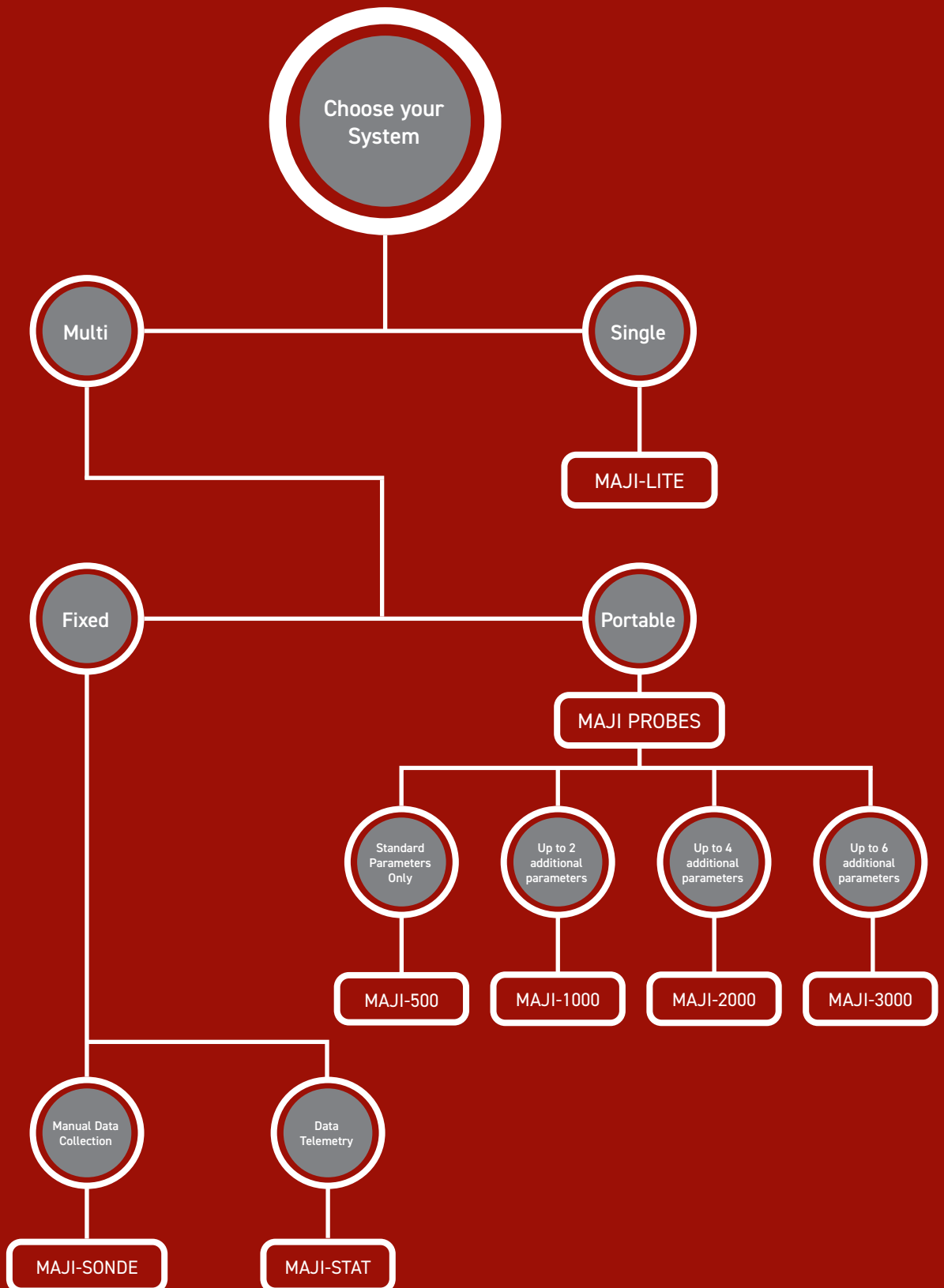
MAJI SYSTEMS

WATER QUALITY AND LEVEL MONITORING

WAGTECH PROJECTS - TRACE20

MAJI SYSTEMS

Wagtech-Trace2o offer an impressive range of single and multi-parameter water quality testing instruments, suitable for a range of requirements, from portable testing to long-term deployment. The Maji Systems cater for all budgets and are an ideal choice for those that want to step up their monitoring practices and are concerned with water quality.





SINGLE-PARAMETER INSTRUMENTS

MAJI-LITE

The Maji-Lite is a portable single-parameter meter which has the ability to measure any one of 8 common parameters. The accompanying electrodes are fully interchangeable making the Maji-Lite highly versatile. The sensor is housed in a rugged and pocket-sized aluminium body meaning it is an ideal solution for measuring water quality in the field.

The socket can house any of the 8 optical electrodes, which are:

- ⦿ Turbidity
- ⦿ Chlorophyll
- ⦿ Blue Green Algae (fresh water)
- ⦿ Blue Green Algae (salt water)
- ⦿ Rhodamine
- ⦿ Fluorescein
- ⦿ CDOM/FDOM
- ⦿ Refined Oil (hydrocarbons)

For electrode specifications, see page 11.

PROBE SPECIFICATIONS

Rating	IP68
Immersion depth	Up to 100m
Operating temperature	-5°C to 70°C
Dimensions, mm	Ø 24 x 250
Weight, g	400

Description	Part Number
Maji-Lite package including probe, GPS Maji-meter, a 3m tough cable with connectors at both ends and various accessories all supplied in a rugged carry case. Electrode not included and must be ordered separately, see page 11.	EN27-100





PORTABLE MULTI-PARAMETER INSTRUMENTS

MAJI PROBES

The Maji Probes are portable units for on-the-spot measurements of water quality and depth. All probes are constructed from tough marine grade aluminium that has been hard anodised, making them suitable for use in both fresh and salt waters. They consist of an aluminium probe, 3m cable and a hand-held Maji-Meter. If longer cable lengths are required, please contact us.

To carry out water quality analysis the probe is simply lowered into the water and the results are displayed on the hand-held device. The meter has inbuilt GPS to record the exact location in which the results were taken and has the capacity to store over 1000 data sets.



KEY FEATURES & BENEFITS

- Wide range of water quality parameters
- Easy calibration
- Low maintenance
- Built-in GPS
- Ability to incorporate ISE and Optical electrode testing simultaneously
- Robust marine grade aluminium
- IP68 waterproof

PARAMETERS

For electrode specifications, see pages 10-11

STANDARD PARAMETERS

- pH
- DO
- EC
- Temperature
- Water Level
- ORP
- TDS
- Resistivity
- Salinity
- SSG

OPTIONAL PARAMETERS

Ion-Selective Electrodes (ISE)

- Ammonium (& Ammonia)
- Calcium
- Chloride
- Fluoride
- Nitrate

Optical Electrodes

- Turbidity
- Chlorophyll
- Blue Green Algae (fresh water)
- Blue Green Algae (salt water)
- Rhodamine
- Fluorescein
- CDOM/FDOM
- Refined Oil (hydrocarbons)

Four models of Maji Probe are available, which vary according to the number of additional ports available for ISE and optical electrodes.



PORTABLE MULTI-PARAMETER INSTRUMENTS

MAJI-500

The Maji-500 offers the essential parameters for water quality monitoring. Supplied as a complete package, you are provided with everything you need to start your analysis.

The Maji-500 measures the standard parameters except Water Level – instead it includes Turbidity, making it a water quality-only probe. It does not have the capability of adding additional parameters, unlike the Maji-1000 and above.



PROBE SPECIFICATIONS

Rating	IP68
Immersion depth	Up to 50m
Operating temperature	-5°C to 70°C
Dimensions, mm	∅ 42 x 290
Weight, g	700

Description	Part Number
Maji-500 package including probe, GPS Maji-meter, tough 3m meter cable, calibration solutions and accessories. All housed in a rugged carry case for easy storage and transport.	EN27-200

MAJI-1000

The Maji-1000 is the smaller of our multi-parameter probes which allow additional electrodes to be added. It comes with the 10 standard Maji parameters included and offers the ability to add 1 ISE and 1 Optical electrode of your choice. This means 12 parameters can be measured simultaneously.

Just like all of our other portable Maji Probes, it is supplied as a package meaning you have everything you need to start testing.



PROBE SPECIFICATIONS

Rating	IP68
Immersion depth	Up to 100m
Operating temperature	-5°C to 70°C
Dimensions, mm	∅ 42 x 290
Weight, g	700

Description	Part Number
Maji-1000 package including probe, GPS Maji-meter, tough 3m meter cable, calibration solutions and accessories. All housed in a rugged carry case for easy storage and transport. Up to 2 additional electrodes (1 x ISE and 1 x optical) can be ordered seperately, see page 11.	EN27-300



PORTABLE MULTI-PARAMETER INSTRUMENTS

MAJI-2000

The Maji-2000 builds on the Maji-1000 by offering the ability to add up to 4 additional electrodes, while still including all 10 standard Maji parameters. Unlike the Maji-1000, these sockets are unrestricted, meaning they can house either ISE or optical electrodes. In total 14 parameters can be measured simultaneously.



PROBE SPECIFICATIONS

Rating	IP68
Immersion depth	Up to 100m
Operating temperature	-5°C to 70°C
Dimensions, mm	Ø 55 x 340
Weight, g	950

Description	Part Number
Maji-2000 package including probe, GPS Maji-meter, tough 3m meter cable, calibration solutions and accessories. All housed in a rugged carry case for easy storage and transport. Up to 4 additional (unrestricted) electrodes can be ordered separately, see page 11.	EN27-400

MAJI-3000

The Maji-3000 is our largest and most advanced multi-parameter probe which comes with the 10 standard Maji parameters included, and offers the ability to add up to 6 unrestricted electrodes. This means the Maji-3000 is capable of measuring up to 16 individual parameters simultaneously.



The Maji-3000 is ideal for long-term deployment due to its automated sensor cleaning system, however it can equally be used as a portable device for those who need high parameter, portable testing.

PROBE SPECIFICATIONS

Rating	IP68
Immersion depth	Up to 100m
Operating temperature	-5°C to 70°C
Dimensions, mm	Ø 77 x 440
Weight, g	1350

Description	Part Number
Maji-3000 package including probe, GPS Maji-meter, tough 3m meter cable, calibration solutions and accessories. All housed in a rugged carry case for easy storage and transport. Up to 6 additional (unrestricted) electrodes can be ordered separately, see page 11.	EN27-500



FIXED SITE WITH MANUAL DATA COLLECTION

MAJI-SONDE

The Maji-Sonde is an all-in-one multi-parameter device, which features built-in data logging, internal power and a sensor cleaning system. This means it is ideal for discrete long term deployment, using only a Kevlar deployment cord without the need for cables or auxiliary equipment at ground level. The Maji-Sonde measures the 10 standard parameters and has the ability to add up to 6 unrestricted additional electrodes.

The internal lithium-ion batteries used in the Maji-Sonde are able to provide up to 180 days of continuous logging, and the internal memory has the ability to store up to 150,000 full data sets. Whenever you need to retrieve your water quality data, simply pull the Maji-Sonde out from the water and connect to a PC.

Logging regimes are configured using the PC/laptop software included. Full features include:

- ⦿ Retrieval of logged data
- ⦿ Full calibration of the instrument with report generation
- ⦿ Logged data output to spreadsheet and text files
- ⦿ Setup utility
- ⦿ Site name and GPS geotagging

PROBE SPECIFICATIONS

IP	IP68
Depth	Up to 100m
Temperature	-5°C to 70°C
Dimensions, mm	∅ 77 x 635
Weight (inc. batteries), g	3400
Batteries	2 x 3.6V Lithium D cells, life greater than 9 months.
Memory capacity	150,000 full data sets

Description	Part Number
Maji-Sonde supplied with the 10 standard Maji parameters, internal memory, deployment key, USB cable and PC software. Requires 2 x 3.6V Lithium D cells and cord – not included. Up to 6 additional (unrestricted) electrodes can be ordered separately, see page 11.	EN27-600
10m non stretch Kevlar deployment cord including clips.	EN27-602
20m non stretch Kevlar deployment cord including clips.	EN27-604
30m non stretch Kevlar deployment cord including clips.	EN27-606
50m non stretch Kevlar deployment cord including clips.	EN27-608





FIXED SITE WITH DATA TELEMETRY

MAJI-STAT

The Maji-Stat is an all-in-one fixed site monitoring system with the ability to monitor up to 16 parameters simultaneously. It is an ideal solution for continuous monitoring of boreholes, rivers and dams.

The system uses a self-cleaning Maji-3000 probe permanently fixed in the water course by a 10m cable for continuous logging with minimal maintenance. Also included is a solar-powered data hub with battery, a data telemetry system and one-year access to our online data management hub. This results in a fully self-sustaining system where data is automatically collected, recorded, transmitted and displayed online with no human interaction.

Existing infrastructure can be used to house the data hub, probe and solar panel or Wagtech can provide bespoke solutions tailored to the specific location. Full installation, commissioning and training is available upon request.



DATA LOGGING & TRANSMISSION FEATURES

- Channels can be configured as triggers/alerts
- One dedicated channel for battery voltage
- Rapid data transmission
- Uses local phone network (GPRS/3G/4G) – if signal fails, data is stored locally
- SDI-12, RS-232 and RS-485 compatible

PROBE SPECIFICATIONS

Rating	IP68
Immersion depth	Up to 100m
Operating temperature	-5°C to 70°C
Dimensions, mm	Ø 77 x 440
Weight, g	1350

Description	Part Number
Maji-Stat with data logging and telemetry, consisting of the Maji-3000 probe, 10m cable, solar powered data hub with battery, data telemetry system, one-year web data hosting, GPS Maji-meter and all necessary accessories. Up to 6 additional (unrestricted) electrodes can be ordered separately, see page 11.	EN27-700





DEWMS - DATA EARLY WARNING MANAGEMENT SYSTEM

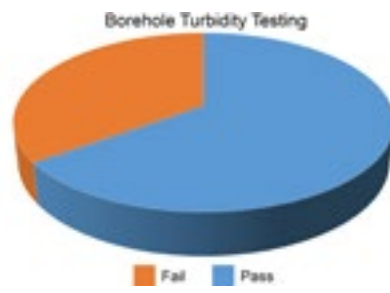
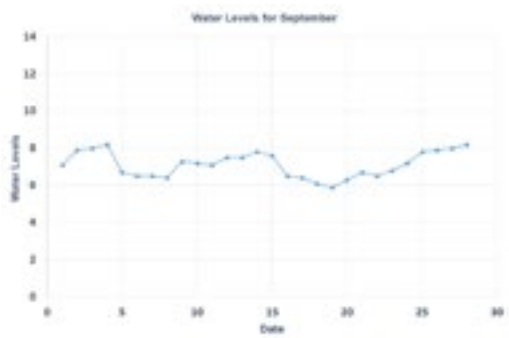
In response to the global need for improved Hydromet systems for mitigating the damaging effects of climate-induced hazards, Wagtech-Trace2o offers a Data Early Warning Management System (DEWMS) available with the Maji-Stat. This software not only acts as a flood early warning system, but it also provides analysis of your water quality data. Full features include:



- Early warning alerts when water levels exceed specified limits
- Water level and quality data analysis via a purpose-built cloud-based platform
- Visualisation of data in charts, maps and graphs for the identification of problem areas
- Calibration management to ensure timely maintenance of water level and quality equipment

FEATURES & BENEFITS

Feature	Benefit
Gather data electronically and instantly upload to a central system	Saves time and avoids human error when recording data
Instantly access all data in a single dashboard anywhere in the world	Improves efficiency and speeds up data analysis
Report and manage consumables	Avoids breaks in data collection while consumables are on order
User-customisable early warning alerts for rising water levels	Enables early preparation and mitigation of flooding
Data encryption and user-specific log-ins	Ensures high-level data security and full traceability
Visualisation of results on maps, graphs and charts	Allows identification of problem areas and prioritisation of remedial action





STANDARD PARAMETERS

INCLUDED WITH ALL MAJI-PROBES, MAJI-SONDE AND MAJI-STAT

Dissolved Oxygen	Range	0 – 500.0% / 0 – 50.00 mg/L
	Resolution	0.1% / 0.01mg/L
	Accuracy	0- 200%: ± 1% of reading. 200%- 500%: ± 10%
Conductivity (EC)	Range	0 – 200 mS/cm (0- 200,000 µS/cm)
	Resolution	3 Auto-range scales: 0 – 9999 µS/cm, 10.00 – 99.99 mS/cm, 100.0 – 200.0mS/cm
	Accuracy	± 1% of reading or ± 1 µS/cm if greater (see note 2)
TDS*	Range	0 – 100,000 mg/L (ppm)
	Resolution	2 Auto-range scales: 0 – 9999mg/L, 10.00 – 100.00g/L
	Accuracy	± 1% of reading or ± 1 mg/L if greater (see note 2)
Resistivity*	Range	5 Ω•cm – 1 MΩ•cm
	Resolution	2 Auto-range scales: 5 – 9999 Ω•cm, 10.0 – 1000.0 KΩ•cm
	Accuracy	± 1% of reading or ± 1 Ω•cm if greater (see note 2)
Salinity*	Range	0 – 70 PSU / 0 – 70.00 ppt (g/Kg)
	Resolution	0.01 PSU / 0.01 ppt
	Accuracy	± 1% of reading or ± 0.1 unit if greater (see note 2)
Seawater Specific Gravity*	Range	0 – 50 σt
	Resolution	0.1 σt
	Accuracy	± 1.0 σt
pH	Range	0 – 14 pH / ± 625mV (see note 3)
	Resolution	0.01 pH / ± 0.1mV
	Accuracy	± 0.1 pH / ± 5mV
ORP	Range	± 2000mV (see note 3)
	Resolution	0.1mV
	Accuracy	± 5mV
Temperature	Range	-5°C – +50°C (23°F – 122°F)
	Resolution	0.1°C/F
	Accuracy	± 0.5°C
Depth	Range	75mm to 100m
	Resolution	± 0.5% FS
	Accuracy	1cm

* Readings calculated from EC and temperature electrode values

OPTIONAL PARAMETERS

Product	Number of Electrodes
Maji-Lite	1 Optical
Maji-500	10 standard (minus Water Level, plus Turbidity)
Maji-1000	10 standard + 1 Optical & 1 ISE
Maji-2000	10 standard + up to 4 unrestricted
Maji-3000, Maji-Sonde & Maji-Stat	10 standard + up to 6 unrestricted





OPTIONAL PARAMETERS CONT.

ION SELECTIVE ELECTRODES (ISE)

Ammonium / Ammonia†	Range	0 – 9,000mg/L (ppm)
	Resolution	2 Auto-range scales: 0.00 – 99.99 mg/L, 100.0 – 9,000 mg/L
	Accuracy	± 10% of reading
Chloride	Range	0 – 20,000mg/L (ppm)
	Resolution	2 Auto-range scales: 0.00 – 99.99 mg/L, 100.0 – 20,000 mg/L
	Accuracy	± 10% of reading
Fluoride	Range	0 – 1,000mg/L (ppm)
	Resolution	2 Auto-range scales: 0.00- 99.99 mg/L, 100.0 – 999.9 mg/L
	Accuracy	± 10% of reading
Nitrate	Range	0 – 30,000mg/L (ppm)
	Resolution	2 Auto-range scales: 0.00- 99.99 mg/L, 100.0 – 29,999.9 mg/L
	Accuracy	± 10% of reading
Calcium	Range	0 – 2,000mg/L (ppm)
	Resolution	2 Auto-range scales: 0.00 – 99.99 mg/L, 100.0 – 2,000 mg/L
	Accuracy	± 10% of reading

OPTICAL ELECTRODES

Turbidity	Range	0 – 3000 NTU
	Resolution	2 Auto-range scales: 0.0 99.9 NTU, 100 – 3000 NTU
	Repeatability	± 2% of reading
Chlorophyll	Range	0 – 500 µg/L (ppb)
	Resolution	0.01 µg/L
	Repeatability	± 2% of reading
Phycocyanin (Freshwater Blue-Green Algae)	Range	0 – 300,000 cells/mL
	Resolution	1 cell/mL
	Repeatability	± 2% of reading
Phycocerythrin (Marine Blue-Green Algae)	Range	0 – 200,000 cells/mL
	Resolution	1 cell/mL
	Repeatability	400 cells/mL
Rhodamine WT Dye	Range	0 – 500 µg/L (ppb)
	Resolution	0.01 µg/L
	Repeatability	± 5% of reading
Fluorescein Dye	Range	0 – 500 µg/L (ppb)
	Resolution	0.01 µg/L
	Repeatability	± 5% of reading
Refined Oil	Range	0 – 10,000 µg/L (ppb)
	Resolution	0.1 µg/L
	Repeatability	± 10% of reading
CDOM/FDOM	Range	0-2,000mg/L (ppm)
	Resolution	2 Auto-range scales: 0.00- 99.99 mg/L, 100.0- 2,000mg/L
	Repeatability	± 10% of reading or 2ppm (whichever is greater)

† Ammonia readings are calculated from Ammonium, pH and temperature electrode values.

ASSOCIATED SPECIALITIES



WATER QUALITY

- ⦿ Highly accurate portable laboratories which allow for testing in remote locations
- ⦿ Wide range of parameters can be measured including microbiological, physiochemical and heavy metals
- ⦿ Different kits available for different applications and budgets
- ⦿ Data management software available (ASMS)



METEOROLOGY

- ⦿ Automatic Weather Stations (AWS) for measuring meteorological, agronomical and hydrological parameters
- ⦿ Comprehensive range of systems suited to all requirements and budgets
- ⦿ Integrated data management and visualisation software



MOBILE LABORATORIES

- ⦿ Allows for fixed laboratory quality testing in remote locations
- ⦿ Mobile box, van, 4x4 and trailer options
- ⦿ Eliminates the need to send samples back to a central laboratory
- ⦿ Non-portable equipment can be used in the field, allowing a greater range of tests



INSTALLATION, COMMISSIONING AND TRAINING (ICT)

- ⦿ Fully qualified and trained engineers carry out a pre site survey, Installation, Commissioning and Training
- ⦿ Provision and supply of local materials
- ⦿ Policy of “training the trainer”
- ⦿ Network of local Wagtech-Trace2o offices and agents for after-sales support

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