

Trace₂O

HydroCheck[®]

HC1000

**Multi-Parameter
Electrochemical
Water Tester**

Instruction Manual

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1.1 Introduction

Thank you for selecting the Trace2o® HydroCheck HC1000 portable multiparameter water quality meter. This manual provides instructions to guide the user in normal operation, diagnostics and maintenance of the instrument. Please read the instructions carefully before use.

1.2 Unpacking the Meter

Before unpacking, ensure that the current work environment meet following conditions.

- Relative humidity is less than 80%.
- Ambient temperature is greater than 0°C and less than 60°C.
- No potential electromagnetic interference.

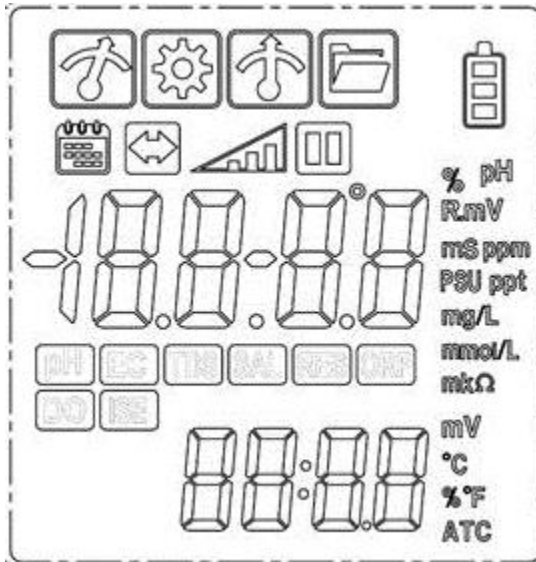
The following list describes the standard accessories of the meter. After the unpacking, please check all accessories are complete. If any are damaged or missing, please contact nearest distributor.

1.3 List of Accessories











- pH Electrode
- Conductivity Electrode
- Dissolved Oxygen Electrode
- pH Buffer Solutions (pH4.01, 7.00)
- Conductivity Calibration Solution (1413 μ S/cm)
- Batteries

2.1 Display

The Trace2o® HydroCheck® HC1000 is equipped with a backlit LCD display that shows measured values, as well as mode and status indicator graphics.



INDEX:


	Measurement mode		Battery indicator
	Calibration mode		Stable indicator
	Setup mode		Hold indicator
	Memory mode		Calibration Due Reminder
	Electrode slope indicator		Automatic Temperature Compensation:

2.2 Keypad

The Trace2o® HydroCheck® HC1000 has a tactile membrane keypad. Words and symbols describe functions of each key. The direction keys are multi-function left/right and up/down keys.



INDEX:

KEY	DESCRIPTION
	<ul style="list-style-type: none">• Power the meter ON/OFF.• Holds the current measured value; press the key again to resume measuring.• In the calibration or setting mode, returns to measurement mode.
<i>mode</i>	<ul style="list-style-type: none">• Toggles between available measurement modes (pH, mV, ORP, Ion, Conductivity, TDS, Salinity, Resistivity, DO).• Press and hold to enter temperature setting mode.
<i>cal</i>	<ul style="list-style-type: none">• Press to enter the calibration mode.• Press and hold to enter the setup menu.
<i>m+</i> / ▲	<ul style="list-style-type: none">• Press to store current measured value.• Press in setup mode to scroll up through menu.• Press in temperature setting mode to increase the setting value.
<i>mR</i> / ▼	<ul style="list-style-type: none">• Press to view calibration report or stored data.• Press in setup mode to scroll down through menu.• Press in temperature setting mode to decrease the setting value.
<i>enter</i>	<ul style="list-style-type: none">• Confirms the calibration, setting value or displayed option.• Press and hold to turn On/Off the backlight.

2.3 Connectors

The Trace2o® HydroCheck® HC1000 has three connectors for connecting the various types of sensors.

CONNECTOR	FUNCTION
Waterproof BNC Connector	pH electrode (or optional ORP or Ion Selective Electrodes)
Waterproof 6-pin connector	Dissolved oxygen electrode
Waterproof 3-pin connector	Conductivity electrode

2.4 Connecting the Sensors

Take out the sensor from the carrying case. Ensure the connectors are clean and dry before connecting.

pH ELECTRODE

- Insert the BNC connector on the pH electrode into corresponding connector on the instrument. Once pushed firmly into place, tighten the waterproof locking collar.



CONDUCTIVITY ELECTRODE

- Insert the 3-pin connector on the conductivity electrode into the corresponding connector on the instrument, ensuring that the lugs are aligned. Once pushed firmly into place, tighten the waterproof locking collar.



DISSOLVED OXYGEN ELECTRODE

- Insert the 6-pin connector on the temperature probe into the corresponding connector on the instrument, ensuring that the lugs are aligned. Once pushed firmly into place, tighten the waterproof locking collar.



- Once connected, DO NOT pull on the cables.

2.5 Inserting/Replacing the Batteries

The HC1000 is supplied pre-installed with the requisite battery.

The HC1000 requires 1 x 9V (PP3) battery.

To replace the battery, follow the below procedure:

1. Remove the battery cover from the rear of the meter.



2. Disconnect the snap connector and remove the battery.
3. Note the polarity and attach the snap connector to the appropriate terminals on the new battery.
4. Ensure that the white waterproofing seal is correctly located, and replace the battery cover.

When batteries are depleted, the meter allows you to use the USB cable connected to computer as a temporarily power supply.

2.6 Refilling Electrolyte Solution for DO Probe

The Dissolved Oxygen electrode requires an electrolyte solution which must be kept topped up during normal use. To refill, follow the below procedure:

1. Unscrew the membrane cap from the bottom of the dissolved oxygen probe.



2. Fill the membrane cap halfway with electrolyte solution.



3. Screw the membrane cap onto the probe, excess electrolyte will drain out.



4. Be sure the cathode of probe makes contact with membrane cap, the electrolyte solution in membrane cap should be without an air bubble.



.....Cathode

Prior to Use

Remove the protective cap from the bottom of the sensor.

3.1 Power On/Off

- To turn the meter on, press the ON/OFF key.
- To turn the meter off, press and hold the ON/OFF key for 3 seconds,
- The meter will turn off automatically if there are no key presses within a specified time period. To disable the auto-off function, go to the Setup Menu section.

3.2 pH Measurement

1. Press the MODE key until the display shows the **pH** indicator.
2. Rinse the pH electrode with distilled water to clean.
3. Immerse the electrode in the sample solution, and stir the solution gently.
4. Wait for the reading to stabilise, and record the value shown on the display.

3.3 ORP Measurement

The HC1000 has two millivolt measurement modes.

ABSOLUTE MILLIVOLT MODE:

- Press the MODE key until the display shows the measurement unit “mV”; the meter enters absolute millivolt measurement mode.

A digital display showing the number 0.0 with a decimal point. To the right of the display is the unit label "mV".

RELATIVE MILLIVOLT MODE:

- Press the MODE key until the display shows the **ORP** indicator; the meter enters relative millivolt measurement mode.

A digital display showing the number 0.0 with a decimal point. To the right of the display is the unit label "R.mV".

Select one of the above modes. Immerse the electrode in the sample solution, and stir the solution gently. Wait for the reading to stabilise, and record the value shown on the display.

3.4 Conductivity/TDS/Resistivity Measurement

1. Press the MODE key until the display shows the **COND** (Conductivity) or **TDS** (TDS) or **RES** (Resistivity) indicator.



The image shows a digital display with two lines. The top line displays '0.000' followed by a small 'µS' symbol to its right. The bottom line displays '25.0' followed by a small '°C' symbol to its right.

2. Rinse the conductivity electrode thoroughly with distilled water.
3. Immerse the electrode in the sample solution, and stir the solution gently.
4. Wait for the reading to stabilise, and record the value shown on the display.

3.5 Salinity Measurement

The HC1000 has two salinity measurement modes: practical salinity (unit: PSU) and natural seawater (unit: ppt).

1. Press the MODE key until the display shows the **SAL** indicator and measurement unit "PSU", the meter enters practical salinity measurement mode.
2. If necessary, press the MODE key again, the display shows the **SAL** indicator and measurement unit "ppt", the meter enters seawater measurement mode.



The image shows a digital display with two lines. The top line displays '0.00' followed by a small 'PSU' symbol in a circle to its right. The bottom line displays '25.0' followed by a small '°C' symbol to its right.

3. Select the desired measurement mode. Immerse the electrode in the sample solution. Stir the solution gently.
4. Wait for the reading to stabilise, and record the value shown on the display.

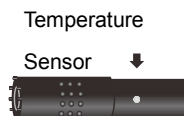
3.6 Dissolved Oxygen Measurement

The HC1000 is suitable for measuring dissolved oxygen in water, wastewater, brine and other liquids. If the intended application is to measure seawater or other water containing large amounts of salt, please set the salinity coefficient before use.

Some gases and vapours such as chloride, sulfur dioxide, hydrogen sulfide, ammonia, carbon dioxide and iodine can permeate the membrane via diffusion, and as such their presence will influence the measurement of dissolved oxygen.

Clean samples are preferred. If the sample contains solvent, grease, sulfide and algae, the membrane on the probe may be blocked, damaged or eroded.

1. Press MODE key until the meter shows **DO** indicator.
2. Connecting the dissolved oxygen probe to meter, wait for 15 minutes to polarise the sensor.
3. If necessary, to set the atmospheric pressure and salinity coefficient in the setup menu (Refer to "SETUP MENU" section).
4. Submerge probe in the sample solution, make sure the temperature sensor on the probe is fully immersed.



5. Stir the solution gently, wait for the reading to stabilise, record the measured value on the display.

3.6 Hold Function

The meter contains two data hold modes.

When the Auto-Hold function is enabled, the meter will automatically sense a stable endpoint reading and hold. The 'Hold' indicator appears on the display.

If the Auto-Hold function is disabled, press the ON/OFF key, the meter will immediately hold currently displayed value. Press the ON/OFF key again to resume measuring.

3.7 Storing and Recalling Data from Memory

The HC1000 allows up to 500 data sets to be stored and recalled.

MEMORY INPUT:

During the measurement process, press the M+ key to store the measured value to the memory, The 'Memory' indicator appears on the display.

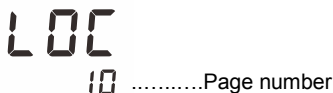
MEMORY RECALL:

1. Press MR key in the measurement mode, the meter shows "LOC/P-01" (Data Log).



The LCD display shows the text "LOC" on the top line and "P-01" on the bottom line.

2. Press ENTER key to confirm; the meter shows page number of the stored data.



The LCD display shows the text "LOC" on the top line and "10Page number" on the bottom line.

3. Press the ▼ key, the meter shows the date and time of the reading (Format: mm-dd, hh-mm).



The LCD display shows the text "2-10" on the top line and "8:30" on the bottom line.

4. Press the ▼ key again, the display shows the stored data.



The LCD display shows the text "7.05" on the top line and "25.0 °C" on the bottom line.

5. After viewing the memory, press the ON/OFF key to return to measurement mode.

4.1 Setup Menu

When in setup mode, the HC1000 displays an integrated setup menu that allows you customise to the operation of the meter to meet your measurement requirements. In the different modes, the meter will show the corresponding options. For general options, the change will be applied to all modes.

pH MODE:

DISPLAY	DESCRIPTION	OPTIONS	DESCRIPTION	DEFAULT
buf	Select from common pH buffer standard groups for calibration.	USA	USA (1.68, 4.01, 7.00, 10.01, 12.45)	•
		NIST	NIST (1.68, 4.01, 6.96, 9.18, 12.45)	
		DIN	DIN (1.09, 4.65, 6.79, 9.23, 12.75)	
		USER	User-Defined Buffer	
CAL	Select the number of calibration points to use when calibrating the meter	1	1 point	
		2	2 points	
		3	3 points	•
		4	4 points	
		5	5 points	
RESO	Set the resolution for pH measurement.	0.001	0.001pH	•
		0.01	0.01pH	
		0.1	0.1pH	
UNIT	Set the temperature unit.	°C	Degrees Celsius	•
		°F	Degrees Fahrenheit	





ORP MODE:

DISPLAY	DESCRIPTION	OPTIONS	DESCRIPTION	DEFAULT
RESO	Set the resolution for ORP measurement.	0.1	0.1mV	•
		1	1mV	

CONDUCTIVITY/TDS/SALINITY/RESISTIVITY MODES:


DISPLAY	DESCRIPTION	OPTIONS	DESCRIPTION	DEFAULT
CELL	Select the cell constant of conductivity electrode.	0.1	K=0.1	
		1	K=1	•
		10	K=10	
		USER	User-Defined	
COE	Select the temperature coefficient of sample.	2.10	Setting Range: 0.0 to 10.0%/°C	2.10
CAL	Select the number of calibration points to use when calibrating the meter	1	1 point	•
		2	2 points	
		3	3 points	
		4	4 points	
		5	5 points	
PURE	Pure water coefficient will be calculated and applied automatically for ultra-pure water measurement if enabled.	YES	Enable	
		NO	Disable	•
Std	Set the normalization temperature for conductivity measurement and calibration.	25°C	25°C	•
		20°C	20°C	
TDS	Set the default TDS conversion factor.	0.5	Setting Range: 0.40 to 1.00	0.5
UNIT	Set the default temperature unit.	°C	Degrees Celsius	•
		°F	Degrees Fahrenheit	

DISSOLVED OXYGEN MODE:

DISPLAY	DESCRIPTION	OPTIONS	DESCRIPTION	DEFAULT
CAL	Select the number of calibration points.		1 point	•
			2 points	
PRES	Select the default atmospheric pressure coefficient.	760	Setting Range: 450 to 850mmHg	760
SAL	Select the salinity coefficient of sample solution.	0.0	Setting Range: 0.0 to 50.0ppt	0.0
RESO	Set the resolution for DO measurement.	0.01	0.01mg/L (0.1%)	•
		0.1	0.1mg/L (1%)	
UNIT	Set the default measurement units.		Degrees Celsius	•
			Degrees Fahrenheit	
		mg/L	Milligrams per liter	•
		ppm	Parts per million	
		mmHg	Pressure unit	•
		kPa	Pressure unit	

GENERAL OPTIONS:

DISPLAY	DESCRIPTION	OPTIONS	DESCRIPTION	DEFAULT
SEt	Sets the stability criteria for measurement. When the "LO" option is enabled, measuring value will stabilize quickly, but reading is less accurate. When the "HI" option is enabled, measuring value will stabilize slowly, but improves accuracy.	LO	Low	•
		HI	High	
HOLD	When the auto-hold function is enabled, the meter will automatically sense a stable end-point reading and hold.	YES	Enable	
		NO	Disable	•
OFF	When the auto-off power is enabled, the meter will turn off automatically if there are no key presses within the specified time period	10	10 minutes	
		20	20 minutes	
		30	30 minutes	
		NO	Disable	•

CALL	When the calibration due reminder is enabled, if you do not recalibrate meter within a specified time period, the meter will automatically show  indicator.	1...31	1 to 31 days	
		OFF	Disable	•
DATE	Sets the date and time of the meter.	---	---	
CLR	Clear all stored data.	YES	Enable	
		NO	Disable	•
rSt	Reset function allows user to restore the meter to factory default settings. When this function is used, all calibration values and settings will be lost or reset.	YES	Enable	
		NO	Disable	•

4.2 Adjusting the settings:

1. If necessary, press MODE key until the display shows corresponding mode indicator (e.g., pH mode).
2. Press and hold the CAL key for 3 seconds, the meter enters setup mode, the display shows adjustable setting, and parameter number.

bUFSetting
P-01Parameter number

3. Press ▲ or ▼ key to scroll through the menu and select the parameter to amend (Refer to Setup Menu section).

HOLd
P-06

4. Press ENTER key to confirm, the display shows the currently selected option.

nOCurrent Option
HOLdSetting

5. Press ▲ or ▼ key to select the desired option.
6. Press ENTER key to confirm, the meter returns to measurement mode. Setting is completed.

4.3 Exiting setup mode:

During the setup mode, if you want to exit setup menu, press MEAS key, the meter will return to measurement mode immediately.

4.4 Setting the Date and Time

The HC1000 has a real time clock that is used to time-stamp stored measurement values and calibration data. The below instructions describe initial setup of the date and time values:

1. Press and hold the CAL key for 3 seconds to enter setup mode.
2. Press ▲ or ▼ key until the display shows the "DATE" option.



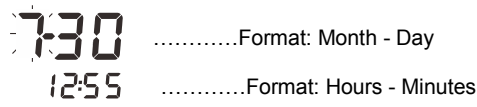
The LCD display shows the word "DATE" in large characters, with "P-09" displayed below it.

3. Press ENTER key to confirm, the meter shows the currently programmed year.



The LCD display shows "20 12" in large characters, with "YEAR" displayed below it. To the right of "20 12" is a dotted line followed by the word "Year".

4. Press ▲ or ▼ key to set the year.
5. Press ENTER key to confirm, the meter shows the currently programmed date and time. The value currently being amended will be flashing.



The LCD display shows "7:30" in large characters with a colon, and "12:55" in smaller characters below it. To the right of "7:30" is a dotted line followed by "Format: Month - Day". To the right of "12:55" is a dotted line followed by "Format: Hours - Minutes".

6. Press ▲ or ▼ key to set each value
7. Press ENTER to cycle through to set each value.
8. When finished, press ENTER key to confirm; and the meter returns to measurement mode.

4.5 Temperature Compensation

For accurate results, either manual or automatic temperature compensation must be enabled before measurement or calibration.

4.6 Automatic Temperature Compensation:

- Insert the 6-pin connector on the temperature probe into the corresponding connector on the instrument, ensuring that the lugs are aligned. Once pushed firmly into place, tighten the waterproof locking collar.
- The “ATC” indicator will show on the display; the meter is now switched to automatic temperature compensation mode.



The image shows a digital display with the number '25.0' in a large, bold font. To the right of the number is a small '°C' symbol. Below the number, the letters 'ATC' are displayed in a smaller font, indicating that automatic temperature compensation is active.

4.7 Manual Temperature Compensation:

- 4.7.1. DO NOT connect the temperature probe to meter.
- 4.7.2. Press and hold the MODE key for 3 seconds to enter temperature setting mode.
- 4.7.3. Press ▲ or ▼ key to set the temperature of the sample.
- 4.7.4. Press ENTER key to confirm, the meter returns to measurement mode. Setting is completed.

In the temperature setting mode, pressing and releasing the ▲ or ▼ key will increase or decrease the temperature value by 0.1. Pressing and holding the ▲ or ▼ key will increase or decrease the temperature value by 1.

5.1 pH Calibration

The HC1000 allows up to a 5 point calibration in the pH mode. We recommend performing at least a 2 point calibration for more accurate measurement. The meter will automatically recognise and calibrate to following standard buffer values.

USA Standard Buffer Options	pH 1.68, 4.01, 7.00, 10.01, 12.45
NIST Standard Buffer Options	pH 1.68, 4.01, 6.86, 9.18, 12.45
DIN Standard Buffer Options	pH 1.09, 4.65, 6.79, 9.23, 12.75

If you selected the user-defined option in the setup menu, the meter will allow only 2 point calibration.

Single point calibration should only be carried out with buffers of pH 7.00, 6.86 or 6.79, otherwise calibration will not be accepted.

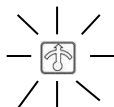
Ensure that the meter is calibrated when attaching a new electrode or before first use. DO NOT use visibly dirty calibration solution; contaminants in solution will affect the calibration and eventually the accuracy of the measurement.

5.2 Single Point Calibration:

- 5.2.1 Ensure that 1 point calibration is selected in the setup menu.
- 5.2.2 Rinse the pH electrode with distilled water.
- 5.2.3 Ensure the display shows the pH indicator, and press CAL key, the meter shows "pH7.00/CAL" (or "6.86/CAL", "6.79/CAL").

pH
7.00
CAL

- 5.2.4 Immerse the pH electrode in the pH7.00 (or 6.86, or 6.79) buffer solution. The tip of the electrode must be completely submerged in the calibration solution. Stir the solution gently to ensure homogeneity.
- 5.2.5 Press ENTER key, "Calibration" indicator begins flashing. Wait for the measured value to stabilize; the display shows "END". The meter returns to measurement mode automatically.



pH
7.00
CAL → End

5.3 Multi-Point Calibration:

5.3.1 Make sure that you have selected between 2 and to 5 point calibration in the setup menu.

5.3.2 Repeat steps 5.2.2 to 5.2.5 above. When the first calibration point is completed, the display will show "CAL2". The meter prompts to continue with second calibration point.

- - - -
CAL2

5.3.3 Rinse the pH electrode with distilled water. Dip the electrode into the next buffer solution (e.g., pH4.01). The meter automatically senses the current calibration solution and begins calibrating. "Calibration" indicator begins flashing.

┌───┐
│ ☒ │
└───┘
4.01
CAL2

5.3.4 Wait for the measured value to stabilise; the display shows "CAL3". The meter prompts to continue with third calibration point.

5.3.5 Repeat the steps from 5.3.3 until the display shows "END". Once calibration is complete, the meter returns to measurement mode automatically.

End

5.4 pH Calibration with User-Defined Buffers:

5.4.1 Ensure that the "USER" option is selected in the setup menu.

N.B. Custom buffer solution values should be at least 1 pH unit apart.

USER
buf

5.4.2 Rinse the pH electrode with distilled water. Immerse the electrode in the custom buffer solution. Stir the solution gently. The meter shows the current measured value.

5.4.3 Press ▲ or ▼ key to increase or decrease displayed value according to the value of the custom buffer, and press ENTER key to confirm. "Calibration" indicator begins flashing.

5.4.4 Wait for the measured value to stabilize, the display shows "CAL2". The meter prompts to continue with second calibration point.

5.4.5 Rinse the pH electrode with distilled water. Immerse the electrode in the next custom buffer solution.

5.4.6 Press ▲ or ▼ key to increase or decrease displayed value according to the value of the custom buffer, and press ENTER key to confirm. "Calibration" indicator begins flashing.

5.4.7 Wait for the measured value to stabilise, the display shows "END". Once calibration is complete, the meter returns to measurement mode automatically.

- During the calibration process, to exit the calibration mode, press the ON/OFF key; the meter will return to measurement mode immediately.
- The electrode slope indicator shows average slope of the pH electrode after calibration. When the electrode or calibration result does not meet measurement requirements, the indicator will disappear on the display.



5.5 pH Calibration Report

The meter allows checking of the calibration data of the pH electrode for diagnostic purposes.

5.5.1. Press the mR key in the pH measurement mode, the display shows "LOC/P-01".

5.5.2. Press ▲ or ▼ key until the display shows "ELE/P-02" (Electrode Diagnosis).

ELE
P-02

5.5.3. Press ENTER key to confirm, the meter shows the last calibration date (Format: mm-dd).

20 1

5.5.4. Press ▼ key, the meter shows "OFS" (zero-point offset potential).

OFS
2^{mV}

5.5.5. Press ▼ key again, the meter shows the slope of each pH buffer group.

4-7Calibration Points
99.8%Slope

5.5.6. Press the ON/OFF key to return to measurement mode.

If the meter is not calibrated or calibration is not successful, the display will show "----" only.

6.1 ORP Calibration

The HC1000 allows single point calibration in the relative mV mode, but calibration is not necessary unless an exact readout agreement with a work standard, and at a specific ORP value is needed.

1. Press the MODE key until the meter shows **ORP** indicator.



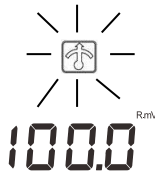
0.0^{RmV}

2. Rinse the ORP electrode with distilled water. Immerse the electrode in the calibration solution. Stir the solution gently.
3. Press CAL key, the meter shows the current measured value.



86.0^{mV}

4. Press ▲ or ▼ key to set the displayed value, press ENTER key to confirm. The “Calibration” indicator begins flashing.



100.0^{RmV}

5. Wait for the measured value to stabilise, the display shows “END”. Once calibration is complete, the meter returns to measurement mode automatically.

6.2 ORP Calibration Report

The meter allows checking the mV offset of the ORP electrode for diagnostic purposes.

1. Press the mR key in the ORP measurement mode, the display shows “LOC/P-01”.
2. Press ▲ or ▼ key until the meter shows “ELE/P-02” (Electrode Diagnosis).



ELE
P-02

3. Press ENTER key to confirm, the meter shows the last calibration date (Format: mm-dd).



2-02

4. Press ▼ key, the meter shows "OFS" (Offset Potential).

A digital display showing the text "OFS" in a large, bold, black font. Below the "S" in "OFS", the number "2" is displayed in a smaller font, with a superscript "mV" to its right. The entire display is centered horizontally.

5. Press the ON/OFF key to return to measurement mode

7.1 Conductivity Calibration

The HC1000 is capable of using conductivity electrodes with different cell constants.

Before use, ensure that the correct cell constant is selected (0.1, 1 or 10) in the setup menu. If the current option is "USER", the automatic calibration function will be disabled (Refer to Setup Menu section).

In the automatic calibration mode, the meter allows up to a 5 point calibration. To ensure higher accuracy, at least a 3 point calibration is recommended. Alternatively, it is advised to select a standard value close to the sample value under measurement.

The meter will automatically detect common conductivity standard solutions and prompt the user to calibrate the meter.

When the calibration is completed, all new calibration values will automatically override existing data.

The following table shows acceptable conductivity range of calibration solution for each measuring range.

MEASURING RANGE	CALIBRATION SOLUTION RANGE	DEFAULT
0~20 μ S/cm	7~17 μ S/cm	10 μ S/cm
20~200 μ S/cm	70~170 μ S/cm	84 μ S/cm
200~2000 μ S/cm	700~1700 μ S/cm	1413 μ S/cm
2~20mS/cm	7~17mS/cm	12.88mS/cm
20~200mS/cm	70~170mS/cm	111.8mS/cm

7.2 Single Point Calibration:

7.2.1 Press the MODE key until the meter shows the **COND** indicator.



0.000 μ S
25.0 $^{\circ}$ C

7.2.2 Rinse the conductivity electrode with distilled water, then rinse with a small amount of calibration solution.

7.2.3 Press the CAL key; the meter enters the calibration mode.

7.2.4 Immerse the conductivity electrode in the calibration solution. The meter automatically shows the detected calibration standard (e.g., 1413 μ S/cm).



1413 μ S
CAL 1

7.2.5 Press ENTER key to confirm, “Calibration” indicator begins flashing.



7.2.6 Wait for the measured value to stabilise, the display shows “END”. Once calibration is complete, the meter returns to measurement mode automatically.

End

7.3 Multi-Point Calibration:

7.3.1 Make sure that you have selected 2 to 5 points calibration in setup menu.

7.3.2 Repeat steps 1.2 to 1.5 above; when the first calibration point is completed, the display will show “CAL2”. The meter prompts you to continue with the second calibration point.



7.3.3 Rinse the conductivity electrode with distilled water. Immerse the electrode in the next calibration solution, the meter automatically shows the currently detected calibration standard (e.g., 12.88mS/cm).

7.3.4 Press ENTER key to confirm, “Calibration” indicator begins flashing.



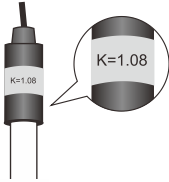
7.3.5 Wait for the measured value to stabilise, the display shows “CAL3”. The meter prompts you to continue with third point calibration.

7.3.6 Repeat steps 2.3 to 2.4 above until the display shows “END”. Once calibration is complete, the meter returns to measurement mode automatically.

7.4 Manual Calibration:

The HC1000 offers a quick manual calibration mode, allowing the user to easily calibrate the meter.

7.4.1 Record the cell constant value, which is clearly marked on a label attached to the electrode (e.g., $K=1.08$).



7.4.2 Ensure the Cal indicator is showing, and press and hold the CAL key for 3 seconds to enter setup menu, the display shows "CELL" option.

CELL
P-01

7.4.3 Press ENTER key to confirm, the meter enters the cell constant setting mode.

1
CELL

7.4.4 Press ▲ or ▼ key to select "USER" option.

USER
CELL

7.4.5 Press ENTER key to confirm, the meter enters User-Defined mode.

1.000
CELL

7.4.6 Press ▲ or ▼ key to set each digit according to the value marked on the electrode.

7.4.7 Press ENTER key to confirm until the setting values stop flashing. Once calibration is complete, the meter returns to measurement mode automatically.

- To exit calibration, press ON/OFF key; the meter will return to measurement mode immediately.
- Performing the conductivity calibration will simultaneously calibrate the corresponding TDS, salinity and resistivity value.

7.5 Conductivity Calibration Report

The meter allows checking of the calibration factor of the conductivity electrode for diagnostic purposes.

1. Press the MR key in the conductivity measurement mode, the display shows "LOC/P-01".
2. Press ▲ or ▼ key until the meter shows "ELE/P-02" (Electrode Diagnosis).

ELE
P-02

3. Press ENTER key to confirm; the meter shows the last calibration date (Format: mm-dd).

204

4. Press ▼ key, the meter shows calibration point and calibration factor (e.g., K=0.998).

14 13^{uS} Calibration Point
0998 Calibration Factor

5. After the browsing, press MEAS key to exit the current mode.

EXIT THE CALIBRATION:

To exit calibration, press the ON/OFF key at any point; the meter will return to measurement mode immediately.

8.1 DO Calibration in % Saturation Mode

The HC1000 dissolved oxygen probe can be calibrated quickly in air. In the percentage saturation mode, the meter is able to perform either 1 or 2 points calibration. For single point calibration, it is recommended to perform 100% saturation calibration in air. For the 2 point calibration, the second point should be saturated anhydrous sodium sulfite solution (zero oxygen solution).

8.2 100% saturation calibration:

8.2.1 Press MODE key until the meter shows **DO** indicator and measurement unit “%”.



The digital display shows "0.0" in large digits, with a small "0.0" above it and a "%" symbol to the right. Below "0.0" is "25.0" with "°C" and "ATC" to its right.

8.2.2 Make sure that 1 point calibration is selected in the setup menu.

8.2.3 Press CAL key; the meter enters calibration mode, the display shows “100%/CAL1”.



The digital display shows "100" in large digits, with a small "100" above it and a "%" symbol to the right. Below "100" is "CAL 1".

8.2.4 Hold the dissolved oxygen probe in the air, press ENTER key to confirm. Wait for the measured value to stabilise, the display shows “END”. Once calibration is complete, the meter returns to measurement mode automatically.

8.3 2 Point Calibration:

8.3.1 Ensure that 2 point calibration is selected in the setup menu.

8.3.2 Press CAL key, the meter shows “100/CAL1”.

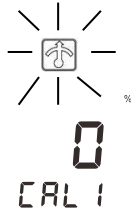
8.3.3 Press ▲ or ▼ key until the display shows “0/CAL1”.



The digital display shows "0" in large digits, with a small "0" above it and a "%" symbol to the right. Below "0" is "CAL 1".

8.3.4 Immerse the dissolved oxygen probe into the saturated anhydrous sodium sulfite solution (zero oxygen solution). Stir the probe gently.

8.3.5 Press ENTER key to confirm, “Calibration” indicator begins flashing.



8.3.6 Wait for the measured value to stabilise, the display shows “100/CAL2”. The meter prompts you to continue with second point calibration.



8.3.7 Immerse the dissolved oxygen probe in air-saturated water for 3 to 5 minutes, press ENTER key to confirm. Wait for the measured value to stabilise, the display shows “END”. Once calibration is complete, the meter returns to measurement mode automatically.

End

N.B. Performing a percentage saturation calibration will simultaneously calibrate the corresponding mg/L (or ppm) concentration value. Therefore, additional mg/L calibration isn't required in most circumstances.

9.1 DO Calibration in mg/L or ppm Mode

9.1.1 Press MODE key until the meter shows **DO** indicator and measurement unit “mg/L” or “ppm”.



0.00 mg/L
25.0 °C

9.1.2 Ensure that 1 point calibration is selected in the setup menu.

9.1.3 If necessary, set the salinity and atmospheric pressure coefficient in the setup menu (Refer to Setup Menu section).

9.1.4 Press CAL key, the display shows “8.25mg/L/CAL1” (@25°C).



8.25 mg/L
CAL 1

9.1.5 Dip the dissolved oxygen probe into the air-saturated water for 3 to 5 minutes.

9.1.6 Press ENTER key to confirm, “Calibration” indicator begins flashing.



8.25 mg/L
CAL 1

9.1.7 Wait for the measured value to stabilise, the display shows “END”. Once calibration is complete, the meter returns to measurement mode automatically.

9.2 2 Point Calibration:

9.2.1 Make sure that you have selected 2 points calibration in the setup menu.

9.2.2 Press CAL key, the meter shows “8.25mg/L/CAL1” (@25°C).

9.2.3 Press ▲ or ▼ key until the display shows “0.00mg/L/CAL1”.



0.00 mg/L
CAL 1

9.2.4 Immerse the dissolved oxygen probe into the saturated anhydrous sodium sulfite solution (zero oxygen solution). Stir the solution gently.

9.2.5 Press ENTER key to confirm, “Calibration” indicator begins flashing.



9.2.6 Wait for the measured value to stabilise; the display shows “8.25/CAL2”. The meter prompts you to continue with second point calibration.



9.2.7 Immerse the dissolved oxygen probe in air-saturated water for 3 to 5 minutes, press ENTER key to confirm. Wait for the measured value to stabilise, the display shows “END”. Once calibration is complete, the meter returns to measurement mode automatically.

End

EXIT THE CALIBRATION:

During the calibration process, if you want to exit calibration, press MEAS key, the meter will return to measurement mode immediately.

10.1 Temperature Calibration

When automatic temperature compensation is enabled, the meter will need to be calibrated if the temperature reading displayed differs from that of an accurate thermometer.

10.1.1. Press and hold the MODE key for 3 seconds to enter temperature calibration mode, the display shows current temperature reading.

25.0 °C
ATC

10.1.2. Press ▲ or ▼ key to set the temperature value.

10.1.3. Press ENTER key to confirm. Calibration is completed.

11.1 pH Electrode Care and Maintenance

The pH electrode is especially susceptible to dirt and contamination. Regular cleaning is necessary depending on the extent and condition of use.

AFTER MEASURING:

Rinse the pH electrode in distilled water, and store the electrode in a suitable electrode storage solution.

CLEANING THE ELECTRODE:

- Salt deposits: Soak the electrode in warm tap water to dissolve deposits, then thoroughly rinse with distilled water.
- Oil or Grease film: Wash the electrode bulb gently in some detergents and water. If necessary, use isopropyl alcohol to clean the electrode bulb, then rinse with distilled water. Place the sensor in the electrode storage solution for 30 minutes.
- Clogged reference junction: Heat a diluted KCl solution to 60 °C to 80°C. Place the tip of the electrode into the heated solution for about 10 minutes. Allow the electrode to cool in some room temperature KCl solution.
- Protein deposits: Prepare a 1% pepsin solution in 0.1M of HCL. Place the electrode in the solution for 10 minutes. Rinse the sensor with distilled water.

REACTIVATING THE ELECTRODE:

If stored and cleaned properly, the electrode should be ready for immediate use. However, a dehydrated bulb may cause sluggish response. To rehydrate the bulb, immerse the electrode in a pH 4.01 buffer solution for 10 to 30 minutes. If this fails, the electrode requires activation.

- Soak the pH electrode in 0.1M HCl for 5 minutes.
- Remove and rinse with deionised water, then place in 0.1M NaOH for 5 minutes.
- Remove and rinse again, and soak in electrode storage solution for 30 minutes.

11.2 ORP Electrode Care and Maintenance

- Ensure that the ORP electrode is thoroughly washed with distilled water after each use.
- In aggressive chemicals, dirty or viscous solutions, and solutions with heavy metals or proteins, take readings quickly and rinse electrode immediately after.
- If the electrode is not in use for long periods, store the electrode with a suitable electrode storage solution.

CLEANING THE ELECTRODE:

Contamination of the sensor often results in slow response and inaccurate readings. If necessary, clean the element by one of the following procedures:

Inorganic Deposits:

- Soak the ORP electrode in 0.1M HCl for 10 minutes.
- Remove and rinse with distilled water, then place in isopropyl alcohol for 5 minutes.
- Remove and rinse again, and soak in pH 4.01 buffer solution for 15 minutes.

Oil and Grease Films:

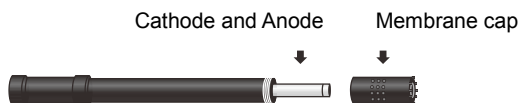
- Wash the electrode gently with detergent and water.
- Immerse the electrode in electrode storage solution for at least 30 minutes.

11.3 Conductivity Electrode Care and Maintenance

- Ensure that the conductivity electrode is thoroughly washed with distilled water after each use.
- If there is a build-up of solids inside the measurement area of the cell, these should be removed very carefully with a cotton bud soaked in solvent, taking care not to touch the metal parts of the inner cell.

11.4 DO Probe Care and Maintenance

- Always keep probe membrane moist.
- If dissolved oxygen probe is not in use for long periods, unscrew membrane cap and rinse the probe's cathode, anode and the membrane with deionised water, then soak up residual water with filter paper, and re-install the probe.



12.1 Troubleshooting

LCD DISPLAY	CAUSE	CORRECTIVE ACTION
■■■	Electrode dried out	Soak the pH electrode in 3M KCL solution for 15 minutes Soak the conductivity electrode in tap water for a few minutes
	Measured value is out of range	Check the electrode whether clogged, dirty or broken
Err	Incorrect calibration solutions	Using the fresh calibration solutions for calibration
	Setting value does not match calibration solution	Reset the calibration value
	pH electrode is out of service life	Replace the pH electrode
	Keypad is not working properly	Replace the batteries
	DO electrolyte solution is depleted	Refill the electrolyte solution
	Zero oxygen solution is contaminated	Replace the calibration solution

13.1 Appendix 1: How to calculate the temperature coefficient

To determine the temperature coefficient of sample solution, use the following formula:

$$T_c = \frac{C_{TB} - C_{TA}}{C_{TA}(T_B - 25) - C_{TB}(T_A - 25)} \times 100\%$$

Where:

T_c = Temperature coefficient

C_{TA} = Conductivity at Temperature A

C_{TB} = Conductivity at Temperature B

T_A = Temperature A

T_B = Temperature B

1. Press and hold the MODE key for 3 seconds to enter temperature setting mode.
2. Press ▲ or ▼ key to set the temperature at 25°C.
3. Dip the conductivity electrode and temperature probe into sample solution A.
4. Record the temperature value T_A and conductivity value C_{TA} .
5. Repeat the steps above, whilst dipping the electrode and probe into same sample solution B. Make sure both sample solutions have about 5°C to 10°C difference.
6. Record the temperature value T_B and conductivity value C_{TB} .
7. Calculate the temperature coefficient of sample solution according to the formula shown above.
8. Enter the calculated temperature coefficient into the meter.

13.2 Appendix 2: How to calculate the TDS conversion factor

To determine the TDS conversion factor, use the following formula:

$$\text{Factor} = \frac{\text{Actual TDS}}{\text{Actual Conductivity @ 25}^\circ\text{C}}$$

Where:

Actual TDS: value of a precisely weighed quantity of anhydrous NaCl or KCl dissolved in high purity water.

Actual Conductivity: the meter measured conductivity value.

For example:

Dissolve 64 grams of potassium chloride reagent in 1L distilled water. If its conductivity value is 100mS/cm, then TDS conversion factor is 0.64.

13.3 Appendix 3: Pressure vs Altitude Table

ALTITUDE (m)	kPa	mmHg
0	101.3	760
100	100.1	750
200	98.8	741
300	97.6	732
400	96.4	723
500	95.2	714
600	94.0	705
700	92.8	696
800	91.7	688
900	90.5	679
1000	89.4	671
1100	88.3	662
1200	87.2	654
1300	86.1	646
1400	85.0	638
1500	84.0	630
1600	82.9	622
1700	81.9	614
1800	80.9	607
1900	79.9	599
2000	78.9	592

14.1 Warranty

Trace2o hopes that the HydroCheck HC1000 will give many years of trouble-free operation, but in the event of a technical problem occurring the instrument is covered by the Trace2o Ltd standard warranty terms and conditions available via email or via download from www.trace2o.com.

In the event that any technical assistance is required Trace2o Customer service department will be happy to assist. Contact details as follows:

Trace2o Ltd

The Technology Centre

Station Road

Thatcham

Berkshire. RG19 4HZ

UK.

T: 01635 866772

E: Technical@Trace2o.com

NOTES



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sales@Trace2o.com www.Trace2o.com

APPLICATION NOTE

T2O-AN-P60

AMMONIA (P60) METHOD

The following application note explains the procedure for the detection of Ammonia (P60) using the HT1000 Photometer.

Equipment:

- HT1000 Photometer
- 10ml vial
- Stirring rod
- Ammonia Nos. 1 & 2 tablets

Safety:

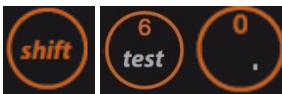
- Consult the safety data sheet for all of the reagents before use. Even if you have used HydroTest reagents before, the formulation may have changed.

Getting started:

- Switch the unit on using the power key.



- Select the Ammonia method by depressing the cursor keys until 'Ammonia T' is displayed or use the shortcut by pressing & holding shift followed by 60



Release shift and press enter.



Blank analysis:

- Ensure that the 10ml vial is clean.
- Fill the vial with 10ml of the water sample.
- Fit the cap and tighten.
- Place the vial in the sample chamber, making sure that the arrow marks on the instrument and vial are aligned.
- Press the zero key



- Wait until the following is displayed

Zero accepted
Prepare Test
Press TEST

Sample preparation:

- Add **one Ammonia No.1 tablet** straight from the foil to the water sample.
- Crush the tablet using a clean stirring rod, until no large pieces are visible.
- Add **one Ammonia No.2 tablet** straight from the foil to the water sample.
- Crush the tablet using a clean stirring rod, until no large pieces are visible.
- Close the vial tightly with the cap and swirl several times until the tablet is dissolved.

Analysis:

- Place the vial in the sample chamber, making sure that the marks on the instrument and vial are aligned.
- Press the Test key



- Wait for a reaction period of **10 minutes**
- After the reaction period, the measurement starts and the result is displayed in mg/l Ammonia as N.
- Depress the cursor keys to cycle between N, NH₄ and NH₃

LOD/Tolerance

- The Lower LOD is 0.02 mg/l (20ppb), upper LOD is 1 mg/l (1000ppb).
- Tolerance: ± 0.005mg/l.

Notes

- For best results, rinse vials thoroughly between with deionised water. Ensure that the outside of the vials are clean, dry and free from fingerprints. Always handle vials by the lid where possible.
- The tablets must be added in the correct sequence. Ammonia No. 1 tablet will only dissolve fully after Ammonia No. 2 tablet is added.
- The tablets should be added direct from the foil avoiding contact with hands or surfaces.
- The temperature is critical for full sample development. Below 20°C, increase reaction time to 15 minutes.
- The tablets are unsuitable for determination of ammonia in sea water or brackish water due to precipitation of salts. A solution is available if necessary.

APPLICATION NOTE

T2O-AN-P100

CHLORINE FREE & TOTAL (P100) METHOD

The following application note explains the procedure for the detection of Free and Total Chlorine (P100) using the HT1000 Photometer.

Equipment:

- HT1000 Photometer
- 10ml vial
- Stirring rod
- DPD Nos. 1 & 3 tablets

Safety:

- Consult the safety data sheet for all of the reagents before use. Even if you have used HydroTest reagents before, the formulation may have changed.

Getting started:

- Switch the unit on using the power key.



- Select the Chlorine method by depressing the cursor keys until 'Chlorine T' is displayed or use the shortcut by pressing & holding shift followed by 100



Release shift and press enter.



- Depress the cursor keys until the double arrow (>>) is adjacent to the required test (diff/free/total) and press enter.



Blank analysis:

- Ensure that the 10ml vial is clean.
- Fill the vial with 10ml of the water sample.
- Fit the cap and tighten.
- Place the vial in the sample chamber, making sure that the arrow marks on the instrument and vial are aligned.
- Press the zero key



- Wait until the following is displayed

Zero accepted
Prepare Test
Press TEST

Sample preparation (Free Chlorine):

- Add **one DPD No.1 tablet** straight from the foil to the water sample.
- Crush the tablet using a clean stirring rod, until no large pieces are visible.
- Close the vial tightly with the cap and swirl several times until the tablet is dissolved.

Analysis (Free Chlorine):

- Place the vial in the sample chamber, making sure that the marks on the instrument and vial are aligned.
- Press the Test key



- Wait for a few seconds until the result is displayed in mg/l free Chlorine.

Sample preparation (Total Chlorine):

- Add **one DPD No.1 tablet** and **one DPD No. 3 tablet** straight from the foil to the water sample.
- Crush the tablets using a clean stirring rod, until no large pieces are visible.
- Close the vial tightly with the cap and swirl several times until the tablet is dissolved.

Analysis (Total Chlorine):

- Place the vial in the sample chamber, making sure that the marks on the instrument and vial are aligned.
- Press the Test key



- Wait for a reaction period of **2 minutes**
- After the reaction period, the measurement starts and the result is displayed in mg/l total Chlorine.

Sample preparation (Differentiated Determination):

- Add **one DPD No.1 tablet** straight from the foil to the water sample.
- Crush the tablet using a clean stirring rod, until no large pieces are visible.
- Close the vial tightly with the cap and swirl several times until the tablet is dissolved.

Analysis (Differentiated Determination):

- Place the vial in the sample chamber, making sure that the marks on the instrument and vial are aligned.
- Press the Test key



- Remove the vial from the sample chamber.
- Add **one DPD No.3 tablet** straight from the foil to the water sample.
- Crush the tablet using a clean stirring rod, until no large pieces are visible.
- Close the vial tightly with the cap and swirl several times until the tablet is dissolved.
- Place the vial in the sample chamber, making sure that the marks on the instrument and vial are aligned.
- Press the Test key



- Wait for a reaction period of **2 minutes**
- After the reaction period, the measurement starts and the result is displayed in:
mg/l free Chlorine
mg/l combined Chlorine
mg/l total Chlorine

LOD/Tolerance

- The Lower LOD is 0.01 mg/l (10ppb), upper LOD is 6 mg/l (6000ppb).
- Tolerance: ± 0.005 mg/l.

Notes

- For best results, rinse vials thoroughly between with deionised water. Ensure that the outside of the vials are clean, dry and free from fingerprints. Always handle vials by the lid where possible. For deep cleaning of vials, immerse in Sodium Hypochlorite solution for 1 hour and rinse with deionised water.
- The tablets should be added direct from the foil avoiding contact with hands or surfaces.
- The sample should have a pH value of between 6.2 and 6.5 after addition of the reagent.
- High Calcium ion content and/or high conductivity can lead to turbidity of the sample and therefore incorrect measurements – a solution is available if necessary.
- Interferences can occur from oxidising agents such as Bromine and Ozone.

APPLICATION NOTE

T2O-AN-P260

NITRATE (P260) METHOD

The following application note explains the procedure for the detection of Nitrate (P260) using the HT1000 Photometer.

Equipment:

- HT1000 Photometer
- Nitrate test tube
- Nitrate test powder
- Nitrate Test tablet
- 10ml vial
- Stirring rod
- Nitrite LR tablet

Safety:

- Consult the safety data sheet for all of the reagents before use. Even if you have used HydroTest reagents before, the formulation may have changed.

Getting started:

- Switch the unit on using the power key.



- Select the Nitrate method by depressing the cursor keys until 'Nitrate T' is displayed or use the shortcut by pressing & holding shift followed by 260



Release shift and press enter.



Blank analysis:

- Ensure that the 10ml vial is clean.
- Fill the vial with 10ml of the water sample.
- Fit the cap and tighten.
- Place the vial in the sample chamber, making sure that the arrow marks on the instrument and vial are aligned.
- Press the zero key



- Wait until the following is displayed

Zero accepted
Prepare Test
Press TEST

Sample preparation:

- Fill the nitrate test tube with 20ml of the water sample.
- Add **1 level spoon of Nitrate Test powder**
- Close the tube tightly with the cap and swirl vigorously for one minute
- Add **one Nitrate Test tablet** straight from the foil to the water sample.
- Close the tube tightly with the cap and swirl vigorously for one minute
- Stand the tube upright, allow contents to settle, then gently invert three to four times.
- Allow to stand for a further 2 minutes, then open and wipe carefully around the rim to remove solid particles.
- Decant 10ml of the treated solution into the 10ml vial.
- Add **one Nitrite LR tablet** straight from the foil to the water sample.
- Crush the tablet using a clean stirring rod, until no large pieces are visible.
- Close the vial tightly with the cap and swirl several times until the tablet is dissolved.

Analysis :

- Place the vial in the sample chamber, making sure that the marks on the instrument and vial are aligned.
- Press the Test key



- Wait for a reaction period of **10 minutes**
- After the reaction period, the measurement starts and the result is displayed in mg/l Nitrate

LOD/Tolerance

- The Lower LOD is 0.08 mg/l (80ppb), upper LOD is 1 mg/l (1000ppb).
- Tolerance: ± 0.005 mg/l.

Notes

- For best results, rinse vials thoroughly between with deionised water. Ensure that the outside of the vials are clean, dry and free from fingerprints. Always handle vials by the lid where possible.
- The tablets should be added direct from the foil avoiding contact with hands or surfaces.
- Nitrite present in the sample will also react, leading to a higher result. To correct, carry out a nitrite test (P270) on the same sample and subtract the result.
- Nitrate concentrations above 1 mg/L can be diluted up to 100x, with the result multiplied up to compensate.
- Interferences may occur from presence of the following ions: Antimony (III), Iron (III), Lead, Mercury (I), Silver, Chloroplatinate, Metavanadate, Bismuth.
- Copper (II) ions may artificially lower test results.

APPLICATION NOTE

T2O-AN-P270

NITRITE (P270) METHOD

The following application note explains the procedure for the detection of Nitrite (P270) using the HT1000 Photometer.

Equipment:

- HT1000 Photometer
- 10ml vial
- Stirring rod
- Nitrite LR tablet

Safety:

- Consult the safety data sheet for all of the reagents before use. Even if you have used HydroTest reagents before, the formulation may have changed.

Getting started:

- Switch the unit on using the power key.



- Select the Nitrite method by depressing the cursor keys until 'Nitrite T' is displayed or use the shortcut by pressing & holding shift followed by 270



Release shift and press enter.



Blank analysis:

- Ensure that the 10ml vial is clean.
- Fill the vial with 10ml of the water sample.
- Fit the cap and tighten.
- Place the vial in the sample chamber, making sure that the arrow marks on the instrument and vial are aligned.
- Press the zero key



- Wait until the following is displayed

Zero accepted
Prepare Test
Press TEST

Sample preparation:

- Add **one Nitrite LR tablet** straight from the foil to the water sample.
- Crush the tablet using a clean stirring rod, until no large pieces are visible.
- Close the vial tightly with the cap and swirl several times until the tablet is dissolved.

Analysis :

- Place the vial in the sample chamber, making sure that the marks on the instrument and vial are aligned.
- Press the Test key



- Wait for a reaction period of **10 minutes**
- After the reaction period, the measurement starts and the result is displayed in mg/l Nitrite.

LOD/Tolerance

- The Lower LOD is 0.01 mg/l (10ppb), upper LOD is 0.5 mg/l (500ppb).
- Tolerance: ± 0.005 mg/l.

Notes

- For best results, rinse vials thoroughly between with deionised water. Ensure that the outside of the vials are clean, dry and free from fingerprints. Always handle vials by the lid where possible.
- The tablets should be added direct from the foil avoiding contact with hands or surfaces.
- Interferences may occur from presence of the following ions: Antimony (III), Iron (III), Lead, Mercury (I), Silver, Chloroplatinate, Metavanadate, Bismuth.
- Copper (II) ions may artificially lower test results.

