



WP Series

Waterproof Portables



Conductivity
TDS

**Dissolved
Oxygen**

Turbidity

Temperature

pH

Redox

Specific Ions



Rugged and Waterproof

The WP Series enclosure is fully waterproof to an IP67 rating, and will float if dropped into water. The connectors are rated to IP65. The case, keypad and connectors are designed for maximum durability in the harshest conditions. A sturdy carry case is available for field use. The case holds the instrument, sensors and standard solutions. The WP Series is equally at home in laboratory, field or industrial environments.



F1:Cal. F2:Notepad
F3:Mode F4:Setup

User-friendly

The 32 character alphanumeric display features a user-friendly menu system. This guides the user through every step of operation. Full text prompting and error messages are provided. Calibration and set-up are a breeze with the WP Series.

Calendar Clock

The Calendar Clock can be displayed continuously along with the data. The date and time are recorded with every reading when using the Notepad and Automatic DataLogging functions.



7.00pH 25.00°C
31/12 12:00:00



Slope=100.0%
@ 31/12/96 12:00

Good Laboratory Practices (GLP)

To comply with GLP guidelines, the date, time and results of the last calibration are stored in memory, along with the instrument's serial number. This data can be displayed or printed if the RS232 option is fitted. Warning of failed calibration is provided. All readings stored in memory are stamped with the date and time.

150 Reading Notepad

To reduce errors when recording readings, the WP Series has a 150 reading Notepad (100 for WP-89). At the touch of a button, readings can be recorded into memory, along with the date and time. This is especially useful when taking readings in wet environments.



7.00pH 25.00°C
F1:150 12:00:00



7.00pH 25.00°C
Log#150 12:00:00

Automatic Datalogging

Program the WP Series to automatically log readings into memory. Simply set the logging interval from 1 to 90 seconds, 1 to 90 minutes or 1 to 24 hours*, start logging and walk away. Up to 150 readings can be logged (100 for WP-89), along with the date and time. (*Hourly logging not available for WP-89.)

Optional RS232 Interface

Expand the capabilities of the WP Series with the optional RS232 interface. All readings stored in memory can be downloaded to an RS232 printer or a PC. The RS232 option also allows the WP Series to log directly to the printer or PC. Communication software for Windows 3.1, 95 & 98 is available.



F1:Log to Notepad
F3:Send to RS232

Multiple Power Options

The WP Series are supplied with a rechargeable NiMH battery and charger to suit country of destination as standard. For extended field trips, a solar panel or a charger lead for a car cigarette lighter socket are also available.

Australian Made

The WP Series is proudly designed and manufactured in Australia. Our aim is to provide you with the best quality, service and value for money. The TPS Quality System has been certified in accordance with the AS/NZS ISO 9001 standard. For over 30 years, TPS has built a reputation for excellent backup service that is second to none. Compare the list of features with the competition. The WP Series continues to set the standard for handheld instruments.

WP Series

Waterproof
Portables

Specifications

Enclosure

Tough, anti-static Luran-S plastic case, waterproof to IP67. Connectors waterproof to IP65. The instrument will float if dropped into water.

Display

32 character alphanumeric LCD with user-friendly menu system and full text messages.

Memory

150 readings, including date and time. (100 only for WP-89).

Automatic Logging

User-set for one reading every 1 to 90 seconds, 1 to 90 minutes, or 1 to 24 hours*. (*Hourly logging not available for WP-89.)

RS232 Output (Optional)

300, 1200 & 9600 Baud.

(4800 baud only for WP-89.)

8 Bits, No Parity, 1 Stop Bit, XON/XOFF.

Clock

24 Hour calendar clock.

Battery Saver

On Auto switch-off after
5 minutes.

Off. Continuous use.

Power

6V NiMH Rechargeable Battery for 25 to 100 hours depending on model. Battery charger for 240 or 110 V AC supplied. Battery can be charged from any 12V DC power source.

Dimensions

187 x 110 x 51 mm

Mass

Instrument only. Approx 440 g
Full Kit Up to 3.0 kg,
depending on model

Environment

Temperature 0 to 45 °C

Humidity 0 to 95% R.H.

Instrument Options

RS232 Serial Interface 130039

(for all units except WP-89)

RS232 Serial Interface 125198

(for WP-89)

RS232 options include cable.

Software for Windows 95,

98 & ME 130086

Hard Carry Case 130059

Charger lead for 12V cigarette

lighter socket. 130046

12V Battery Clip Lead 130052

Solar Panel 130012

WP-80

pH-mV-Temperature
Meter

Specifications

pH

Range 0 to 14.00 pH

Resolution 0.01 pH

Accuracy. +/-0.01 pH

mV and Relative mV

Range 0 to +/-500.0 and
0 to +/-1500 mV

(auto-ranging)

Resolution 0.15 & 1 mV

Accuracy +/-0.3 & +/-1 mV

Temperature

Range -10.0 to 120.0 °C

Resolution. 0.1 °C

Accuracy. +/-0.2 °C

Input Impedance

>3x10¹² Ohms

Asymmetry Range

-1.00 to 1.00 pH

Slope Range

85.0 to 105.0%

Temperature Compensation

0 to 100 °C, automatic or manual.

The WP-80 automatically detects whether or not the temperature sensor is connected.

Automatic Buffer Recognition

4.00, 6.88, 7.00, 9.23 & 10.00pH

Ordering Information

WP-80 121109

Kit Includes

Combination pH Sensor 121207

Temperature/ATC Sensor 121247

pH6.88 Buffer, 200mL 121306

pH4.00 Buffer, 200mL 121381

Battery Charger 130037

WP-80 Handbook 130050

Optional pH Sensors

Intermediate Junction pH 121234

Glass body pH Sensor 121220

Flat-ended pH Sensor 121223

Gel filled non-flow pH 121226

Micro pH Sensor, 4mm tip. 121210

Submersible pH Sensor, 5m. 111224

See brochure number M-1/2 for full details on the TPS range of pH sensors.

Redox (ORP) Sensors

Plastic Body, Ag/AgCl 121262

Intermediate Junction ORP 121263

Glass body, Calomel Sensor 121264

See brochure number M-3 for full details on the TPS range of Redox (ORP) sensors.

WP-80D

Dual Channel pH-mV-
Temperature Meter

Specifications

The WP-80D features two channels, each of which can be set for pH, mV or Relative mV.

pH

Range 0 to 14.00 pH

Resolution 0.01 pH

Accuracy. +/-0.01 pH

mV and Relative mV

Range 0 to +/-500.0 and
0 to +/-1500 mV

(auto-ranging)

Resolution 0.15 & 1 mV

Accuracy +/-0.3 & +/-1 mV

Temperature

Range -10.0 to 120.0 °C

Resolution. 0.1 °C

Accuracy. +/-0.2 °C

Input Impedance

>3x10¹² Ohms

Asymmetry Range

-1.00 to 1.00 pH

Slope Range

85.0 to 105.0%

Temperature Compensation

0 to 100 °C, automatic or manual.

The WP-80D automatically detects whether or not the temperature sensor is connected.

Automatic Buffer Recognition

4.00, 6.88, 7.00, 9.23 & 10.00pH

Ordering Information

WP-80 121110

Kit Includes

Combination pH Sensor 121207

Temperature/ATC Sensor 121247

pH6.88 Buffer, 200mL 121306

pH4.00 Buffer, 200mL 121381

Battery Charger 130037

WP-80D Handbook. 130050

Optional pH Sensors

Intermediate Junction pH 121234

Glass body pH Sensor 121220

Flat-ended pH Sensor 121223

Gel filled non-flow pH 121226

Micro pH Sensor, 4mm tip. 121210

Submersible pH Sensor, 5m. 111224

See brochure number M-1/2 for full details on the TPS range of pH sensors.

Redox (ORP) Sensors

Plastic Body, Ag/AgCl 121262

Intermediate Junction ORP 121263

Glass body, Calomel Sensor 121264

See brochure number M-3 for full details on the TPS range of Redox (ORP) sensors.

WP-90

Specific Ion-pH-mV-Temperature Meter

Specifications

Specific Ions

Ranges ppM, ppK, % & Molar,
with auto-ranging
Resolution 3 significant digits
Accuracy +/-least significant digit

pH

Range 0 to 14.00 pH
Resolution 0.01 pH
Accuracy +/-0.01 pH

mV and Relative mV

Range 0 to +/-500.0 and
0 to +/-1500 mV
(auto-ranging)

Resolution 0.15 & 1 mV
Accuracy +/-0.3 & +/-1 mV

Input Impedance

>3x10¹² Ohms

Asymmetry Range

Specific Ions Auto detection
pH -1.00 to 1.00 pH

Slope Range

70.0 to 110.0%

Automatic Buffer Recognition

Specific Ions User-defined
pH 4.00, 6.88, 7.00, 9.23 & 10.00

Temperature

Range -10.0 to 120.0 °C
Resolution 0.1 °C
Accuracy +/-0.2 °C

Temperature Compensation

0 to 100 °C, automatic or manual.

Ordering Information

WP-90 121191

Kit Includes

Temperature/ATC Sensor 121247
Battery Charger 130037
WP-90 Handbook 130050

For complete details on the range of Ion Selective Electrodes available from TPS, see brochure numbers M-9 to M-12.

For details on Reference electrodes, see brochure number M-4.

For optional pH sensors see brochure numbers M-1 and M-2.

For optional Redox (ORP) sensors, see brochure number M-3.

WP-87

Multi Channel Logging Thermometer

Specifications

The WP-87 can be user-set for 1, 2, 3 or 4 channel readout.

Ranges -10.0 to 120.0 °C
14.0 to 230.0 °F
264.0 to 383.0 °Kelvin

Resolution 0.1 °C
0.1 °F
0.1 °Kelvin

Accuracy +/-0.1 °C
+/-0.2 °F
+/-0.1 °Kelvin

Differential Readout

The WP-87 can be set to display the difference between channels A and B, and channels C and D.

Maximum/Minimum Readout

The WP-87 can be set to record the maximum and minimum temperature data for each channel. The maximum and minimum data is continuously updated automatically.

Response Time

90% of final value within 7 seconds using standard 6mm diameter sensor.

Calibration

Automatic 2 point calibration. Simultaneous multi-channel calibration is provided. Any number of channels can be calibrated as easily and quickly as one channel.

Ordering Information

WP-87 124110

Kit Includes

1 x Temperature Sensor 121247
Battery Charger 130037
WP-87 Handbook 130050

Optional Sensors

Extra Temperature Sensor 121247
Dual Temp Sensor 121251
Stab Type Sensor 121249
Dual Stab Sensor 121250
Air/Gas Sensor 121252
Dual Air/Gas Sensor 121254
Mini Stab Sensor (3mm dia) 124220
Heavy Duty sensor 114202
(Dual sensors are required for 3 or 4 channel operation.)

Other custom sensors available on request.

WP-87T

Thermocouple Thermometer

Specifications

The WP-87T can be user-set for 1 or 2 channel readout.

The unit can be used with any Type K Thermocouple temperature sensor with standard mini plug.

Ranges -99.9 to 200.0 °C
200 to 1200 °C
-99.9 to 390.0 °F
390 to 2000 °F
173.0 to 473.0 °Kelvin
473 to 1473 °Kelvin

Range is automatically selected, depending on reading.

Resolution 0.1 & 1 °C
0.1 & 1 °F
0.1 & 1 °Kelvin

Instrument Accuracy

The WP-87T is accurate to the resolutions detailed above.

Sensor Accuracy

Up to 200 °C +/-0.2 °C
+/-0.3 °F
+/-0.2 °Kelvin

Above 200 °C +/-1% of reading

Differential Readout

The WP-87T can be set to display the difference between channels A and B.

Maximum/Minimum Readout

The WP-87T can be set to record the maximum and minimum temperature data for each channel. The maximum and minimum data is continuously updated automatically.

Response Time

90% of final value within 3 seconds using standard 3mm diameter sensor.

Calibration

Automatic 2 point calibration. Simultaneous calibration of both channels is provided.

Ordering Information

WP-87T 124120

Kit Includes

3mm Dia Temp Sensor 124204
Battery Charger 130037
WP-87T Handbook 130050

Optional Sensors

Extra Temp Sensor 124204
Air/Gas Temp Sensor 124205
Surface Temp Sensor 124203
Custom Thermocouple 124206

Other custom sensors available on request.

WP-81

Conductivity-Salinity-pH Temperature Meter

Specifications

Conductivity

Ranges . . . 5 ranges, with automatic range selection.

k=0.1 Sensor 2.000 uS/cm to 20.00 mS/cm

k=1.0 Sensor 20.00 uS/cm to 200.0 mS/cm

k=10 Sensor 200.0 uS/cm to 2000 mS/cm

Resolution 0.05% of selected range

Accuracy +/-0.5% of full scale of selected range at 25 °C

Salinity

Ranges . . . 5 ranges, with automatic range selection and linearising software.

k=0.1 Sensor 1.000 ppM to 10.00 ppK

k=1.0 Sensor 10.00 ppM to 100.0 ppK

k=10 Sensor 100.0 ppM to 1000 ppK

Resolution 0.1% of selected range

Accuracy +/-0.5% of full scale of selected range at 25 °C

pH and mV

pH and mV specifications are as per the WP-80. Relative mV is not available on the WP-81.

Temperature

Range -10 to 120.0 °C (Sensor limit 60 °C)

Resolution 0.1 °C

Accuracy +/-0.2 °C

Temperature Compensation

Fully automatic, from 0 to 100 °C.

Ordering Information

WP-81 121132

Kit Includes

Combination pH Sensor . . . 121207

k=1/ATC/Temp Sensor . . . 122201

pH6.88 Buffer, 200mL . . . 121306

pH4.00 Buffer, 200mL . . . 121381

2.76mS/cm Cond Std, 200mL 122306

2ppK Salinity Std, 200mL . . 122307

Battery Charger 130037

WP-81 Handbook 130050

Optional Sensors

k=10/ATC/Temp Sensor . . . 122219

k=0.1/ATC/Temp Sensor . . . 122229

Extended cable / metre . . . 130040 (Maximum 10 metre cable length)

WP-84

Conductivity-Salinity- Temperature Meter

Specifications

Conductivity

Ranges . . . 5 ranges, with automatic range selection.

k=0.1 Sensor 2.000 uS/cm to 20.00 mS/cm

k=1.0 Sensor 20.00 uS/cm to 200.0 mS/cm

k=10 Sensor 200.0 uS/cm to 2000 mS/cm

Resolution 0.05% of selected range

Accuracy +/-0.5% of full scale of selected range at 25 °C

Salinity

Ranges . . . 5 ranges, with automatic range selection and linearising software.

k=0.1 Sensor 1.000 ppM to 10.00 ppK

k=1.0 Sensor 10.00 ppM to 100.0 ppK

k=10 Sensor 100.0 ppM to 1000 ppK

Resolution 0.1% of selected range

Accuracy +/-0.5% of full scale of selected range at 25 °C

Temperature

Range -10 to 120.0 °C (Sensor limit 60 °C)

Resolution 0.1 °C

Accuracy +/-0.2 °C

Temperature Compensation

Fully automatic, from 0 to 100 °C.

Ordering Information

WP-84 122159

Kit Includes

k=1/ATC/Temp Sensor . . . 122201

2.76mS/cm Cond Std, 200mL 122306

2ppK Salinity Std, 200mL . . 122307

Battery Charger 130037

WP-84 Handbook 130050

Optional Sensors

k=10/ATC/Temp Sensor . . . 122219

k=0.1/ATC/Temp Sensor . . . 122229

Extended cable / metre . . . 130040 (Maximum 10 metre cable length)

WP-89

Turbidity Meter

Specifications

With High Sensitivity 90° Probe

Ranges* 0.1 to 30 NTU
1 to 300 NTU

10 to 3,000 NTU

Resolution 0.02 NTU
0.1 NTU

1 NTU

With Wide Range 180° Probe

Ranges* 0.1 to 30 NTU
1 to 300 NTU

10 to 3,000 NTU
100 to 30,000 NTU

Resolution 0.02 NTU
0.1 NTU

1 NTU
10 NTU

* Exact ranging subject to sensor performance. The WP-89 will always select the range that provides the best resolution for the measured value.

Repeatability

2% +/-1 digit on all ranges

Readout Modes

Turbidity (NTU)

Relative Turbidity Reference (NTU)

Relative Turbidity REL (Turbidity - Relative Turbidity Reference)

Datalogging

User-set for reading every 1 to 90 seconds or minutes. 100 reading capacity.

RS232 Port (optional)

4800 baud, 8 Bits, No Parity, 1 Stop Bit, XON/XOFF.

Analogue Output

0 to 2 V DC for full scale of preset measuring range. Output impedance 600 ohms nominal.

Ordering Information

WP-89 125190

Standard Kit Includes

90° High Sensitivity Sensor . 125192 (5 metre cable standard)

Battery Charger 130048

WP-89 Handbook 130050

Options

180° Wide Range Sensor . . . 125194 (5 metre cable standard)

Extended cable / metre . . . 125196 (Maximum 30 metre cable length)

WP89 RS232 Serial Port . . . 125198 (includes cable and DOS software)

180 NTU Primary Std 1L . . . 125200

180 NTU Primary Std 200mL 125202

360 NTU Diluted Std 1L . . . 125204

360 NTU Diluted Std 200mL 125206

WP-82

Dissolved Oxygen-Temperature Meter

Specifications

The WP-82 uses the TPS ED500W Dissolved Oxygen sensor.

ppM (mg/L)

Ranges 0 to 20.00 ppM
Resolution 0.01 ppM
Accuracy +/-0.2% of full scale of selected range

% Saturation

Ranges 0 to 240.0 % Saturation
Resolution 0.1 % Saturation
Accuracy +/-0.3 % Saturation

% Gaseous

Ranges 0 to 45.0 % Gaseous
Resolution 0.1 & 1 % Gaseous
Accuracy +/-0.1% Gaseous

Temperature

Range -10.0 to 120.0 °C (Sensor limit 50 °C)
Resolution 0.1 °C
Accuracy +/-0.2 °C

Salinity Correction

User-set, from 0 to 50.0 ppK NaCl

Barometric Pressure Correction

User-set, from 800 to 1100 HPa

Altitude Correction

User-set, from 0 to 5000m

Temperature Compensation

Dual automatic temperature compensation system.

Ordering Information

WP-82 123147

Kit Includes

Battery Charger 130037
WP-82 Handbook 130050

Options

ED1 DO₂/Temp Sensor 123400
3m Cable 123230
5m Cable 123232
Extended cable / metre 130040
BOD Bottle adaptor 123201

Although longer cable lengths are available, the maximum submersion depth for the ED1 is 3 metres)

WP-82Y

Dissolved Oxygen-Temperature Meter

Specifications

The WP-82Y is compatible with YSI dissolved oxygen sensors.

ppM (mg/L)

Ranges* 0 to 20.00 ppM
and 20.0 to 40.0 ppM
Resolution 0.01 & 0.1 ppM
Accuracy +/-0.2% of full scale of selected range

% Saturation

Ranges* 0 to 240.0 % Saturation
and 240 to 450 % Saturation
Resolution 0.1 & 1 % Saturation
Accuracy +/-0.3 % Saturation

% Gaseous

Ranges* 0 to 45.0 % Gaseous
and 45 to 100 % Gaseous
Resolution 0.1 & 1 % Gaseous
Accuracy +/-0.1% Gaseous

*Automatic range selection, subject to sensor performance.

Temperature

Range -10.0 to 120.0 °C (Sensor limit 50 °C)
Resolution 0.1 °C
Accuracy +/-0.2 °C

Salinity Correction

User-set, from 0 to 50.0 ppK NaCl

Barometric Pressure Correction

User-set, from 800 to 1100 HPa

Altitude Correction

User-set, from 0 to 5000m

Temperature Compensation

Dual automatic temperature compensation system.

Ordering Information

WP-82Y 123148

Kit Includes

Battery Charger 130037
WP-82Y Handbook 130050

Options

YSI DO₂/Temp Sensor 123204
3m Cable 123221
5m Cable 123222
YSI non-stirring BOD 123214
YSI self-stirring BOD 123213
Extended cable / metre 130040

Extended cable is available only for the 123204 sensor (max 60m).

WP-91

Dissolved Oxygen-pH-mV-Temp Meter

Specifications

The WP-91 is compatible with YSI dissolved oxygen sensors.

ppM (mg/L)

As per WP-82Y

% Saturation

As per WP-82Y

% Gaseous

As per WP-82Y

pH

Range 0 to 14.00 pH
Resolution 0.01 pH
Accuracy +/-0.01 pH

mV

Range 0 to +/-500.0 and
0 to +/-1500 mV
(auto-ranging)

Resolution 0.15 & 1 mV
Accuracy +/-0.3 & +/-1 mV

Temperature

As per WP-82Y

pH / mV Input Impedance

>3x10¹² Ohms

pH Asymmetry Range

-1.00 to 1.00 pH

pH Slope Range

70.0 to 110.0%

Automatic Buffer Recognition

4.00, 6.88, 7.00, 9.23 & 10.00

Temperature Compensation

0 to 100 °C, automatic or manual.

Ordering Information

WP-91 123150

Kit Includes

pH6.88 Buffer, 200mL 121306
pH4.00 Buffer, 200mL 121381
Battery Charger 130037
WP-91 Handbook 130050

Options

YSI DO₂/Temp Sensor 123204
3m Cable 123221
5m Cable 123222
Extended cable / metre 130040
(maximum submersion is 60 metres)
YSI non-stirring BOD 123214
YSI self-stirring BOD 123213
Combination pH Sensor 121207
Ag/AgCl Redox Sensor 121262



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TPS Pty Ltd

4 Jamberoo St., Springwood
Brisbane, AUSTRALIA, 4127.

Phone Australia (07) 32 900 400

International 61 7 32 900 400

Fax Australia (07) 3808 4871

International 61 7 3808 4871

E-mail tps@tps.com.au

