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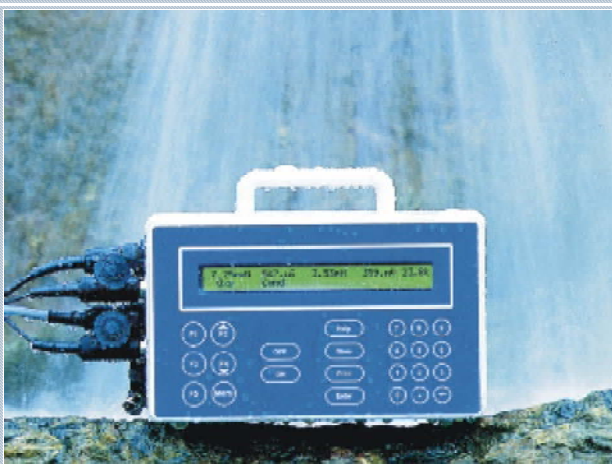
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TPS Australia - Quality instruments since 1968.

Field-Lab Analysers for pH, mV, Conductivity, TDS, Salinity, Dissolved Oxygen, Turbidity & Temperature



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- ◆ **90FL measures pH, Conductivity, TDS, Salinity, Dissolved Oxygen & Temperature**
- ◆ **90FL-MV measures pH, ORP, Conductivity, TDS, Salinity, Dissolved Oxygen & Temperature**
- ◆ **90FL-T measures pH, ORP, Conductivity, TDS, Salinity, Dissolved Oxygen, Turbidity & Temperature**
- ◆ **Automatic calibration**
- ◆ **Automatic datalogging and RS232 Serial Port Computer interface standard (cable sold separately)**

The TPS range of Field Lab Analysers provide a complete measurement solution for several of the most important water quality parameters.

User-friendly

All measurements are shown simultaneously on the 80 character display. There is no need to change modes to check any of your vital data. The user-friendly menu system guides the operator through all operations such as calibration, setup etc. Full text

Notepad Function

A standard feature of the 90 series is the Notepad function. Up to 8100 sets of readings (depending on model) can be recorded for later review. These can be downloaded to a printer or computer via the RS232 port. For added functionality, the user is able to enter up to two additional items to be tagged on to the reading. Many operators use this function as a pond or site identifier, depth or readings from other instruments.

help and error messages are provided along the way.

Waterproof

The 90 series is designed for rugged field applications in wet environments. The case, keypad and connectors are rated to IP65.

Good Laboratory Practices

To comply with GLP guidelines, the date, time and results of the last calibration are stored in memory, along with the unit's serial number. This data can be displayed or sent directly to the RS232 port. Warning of failed calibration is provided. All readings stored in memory are stamped with the date and time.

Datalogging

Automatic datalogging provides the capability to automatically record up to 8100 sets of readings (depending on model) at user-set intervals. The unit remains dormant between readings and only wakes up whenever a reading is due. Battery life is considerably improved with this facility.

RS232 Serial Port Interface

All recorded data can be downloaded directly to a Printer or Computer with the standard RS232 port (cable sold separately). With the **WinTPS** communication software, many instrument functions can be controlled from the computer. This makes the units ideal for remote monitoring.

The 90 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. Since 1968, TPS has built a reputation for excellent backup service that is second to none.

Specifications

pH

Range : 0.00 to 14.00 pH
 Resolution : 0.01 pH
 Accuracy : ±0.01pH
 Impedance : >3 x 10¹² Ohms
 Asymmetry : -1.00 to +1.00 pH
 Range : 85 to 105%
 Temperature Compensation : Automatic, -5 to 100°C
 Calibration : 2 Point automatic
 pH Buffers : Auto recognition of pH4.01, pH6.86, pH7.00, pH9.18 and pH10.01. Other buffers can be keyed in at calibration.

Dissolved Oxygen

Ranges : 0 to 32.00 ppM (mg/L)
 0 to 320.0 %Saturation
 0 to 66.0 % Gaseous
 Resolution : 0.01 ppM (mg/L)
 0.1 %Saturation
 0.1 % Gaseous
 Accuracy : ±0.02 ppM (mg/L)
 ±0.3 %Saturation
 ±0.1 % Gaseous
 Temperature Compensation : Automatic for solubility (ppM only) and membrane permeability.
 Zero

ORP (90FL-T & 90FL-MV only)

Range : 0 to +/-1999 mV
 Resolution : 1 mV
 Accuracy : +/-1 mV

Conductivity

Ranges : 4 ranges with auto range selection

k=0.1 Sensor : 0 to 2.000 uS/cm
 0 to 20.00 uS/cm
 0 to 200.0 uS/cm

k=1 Sensor : 0 to 2000 uS/cm
 0 to 20.00 uS/cm
 0 to 200.0 uS/cm
 0 to 2000 mS/cm

k=10 Sensor : 0 to 200.0 uS/cm
 0 to 2000 uS/cm
 0 to 20.00 mS/cm
 0 to 200.0 mS/cm

Resolution : 0.05% of full scale of selected range.

Accuracy : ±0.5% of full scale of selected range at 25°C.

Temperature Compensation : All readings automatically normalised to 25°C at -2.2%/°C.

Zero Calibration : Automatic in air.

Span Calibration : Automatic to user-defined standard.

TDS

Ranges : 4 ranges with auto range selection.

k=0.1 Sensor : 0 to 1.000 ppM
 0 to 10.00 ppM
 0 to 100.0 ppM
 0 to 1000 ppM

k=1 Sensor : 0 to 10.00 ppM
 0 to 100.0 ppM
 0 to 1000 ppM
 0 to 10.00 ppK

k=10 Sensor : 0 to 100.0 ppM
 0 to 1000 ppM
 0 to 10.00 ppK
 0 to 100.0 ppK

Resolution : 0.1% of full scale of selected range.

Accuracy : ±0.5% of full scale of selected range at 25°C.

Temperature Compensation : All readings automatically normalised to 25°C at -2.2%/°C.

Zero Calibration : Automatic in air.

Span Calibration : Automatic to user-

Calibration : Automatic at less than 5%.

Span Calibration : Automatic in air.

Turbidity (90FL-T only)

Range : 0 to 1000 NTU
 Linearity : 3%
 Temperature Coefficient : <-0.3%/°C, 0 to 40°C
 Zero Calibration : Automatic in distilled water.

Span Calibration : Automatic to user-defined standard.

Temperature

Range : -10.0 to 110.0 °C
 (Cond. sensor limit 60 °C)

Resolution : 0.1 °C
 Accuracy : +/-0.2 °C
 Calibration : Automatic, 1 or 2 point

Good Laboratory Practices

Date, time and value of last calibration for each parameter are stored. This information can be recalled or sent to the RS232 port at any time.

Warning of failed calibration is provided.

All readings stored in memory are stamped with the date and time.

Datalogging**Memory Capacity**

90FL : 8100 readings (6500 with extra data input active).
 90FL-MV : 7200 readings (5900 with extra data input active).
 90FL-T : 6500 readings (5400 with extra data input active).

Extra Data Input

2 extra items of data can be input when using the Notepad function. Each item can be a maximum of 4 characters, including a decimal point. Extra Data items are labelled A and B.

Automatic Logging

All 3 models can be programmed to...

- Automatically log from 1 to 288 readings per day.
- Automatically log readings at a preset interval for a preset duration.

defined Conductivity standard.

Salinity

Ranges :
 k=0.1 Sensor : 0 to 0.10 %
 0 to 1.0 PSU
 k=1 Sensor : 0 to 1.19 %
 0 to 11.9 PSU
 k=10 Sensor : 0 to 8.00 %
 0 to 80.0 PSU

Resolution : 0.01 % or 0.1 PSU
 Accuracy : ±0.5% of full scale of selected range at 25°C.

Temperature Compensation : All readings automatically normalised to 25°C at -2.2%/°C.

Zero Calibration : Automatic in air.
 Span Calibration : Automatic to user-defined Conductivity standard.

RS232 Serial Port Output

8 Bits, No Parity, 1 Stop Bit, XON/OFF Protocol.
 300, 9600 & 19200 baud available.

Display

2 line x 40 Character alphanumeric LCD shows all readings simultaneously.

Keypad

5 Function keys, Menu key, 14 data entry keys, OFF, ON.

Dimensions

230 x 140 x 100 mm

Mass

Meter only : Approx 1.5 kg
 Full Kit : Approx 6.5 kg

Environment

Temperature : 0 to 45 °C
 Humidity : 0 to 90% R.H.

Power

7.2V Rechargeable NiCad Battery
 Any 12VDC supply will recharge the battery.

Ordering Information

90FL

Part No

5 metre bundle 126103/5:

90-FL including 5m cables & sensors.....126103/5

5 metre Option Includes

Submersible pH, sensor, 5m cable.....111224
 k=1 Conductivity/Temperature Sensor, 5m.....122196
 YSI 5739 Dissolved Oxygen Sensor (no cable)...123204
 5m cable for sensor.....123219
 pH7.00 Buffer, 200mL.....121387
 pH4.01 Buffer, 200mL.....121381
 2.76mS/cm Conductivity Standard, 200mL.....122306
 Battery Charger.....130009
 Manual.....130050

90FL-MV

Part No

5 metre bundle 130018/5:

90-FLMV including 5m cables & sensors.....130018/5

5 metre Option Includes

5 metre Option includes

| | |
|---|--------|
| Submersible pH, sensor, 5m cable..... | 111224 |
| ORP, Submersible, 5m..... | 111259 |
| k=1 Conductivity/Temperature Sensor, 5m..... | 122196 |
| YSI 5739 Dissolved Oxygen Sensor (no cable).... | 123204 |
| 5m cable for sensor..... | 123219 |
| pH7.00 Buffer, 200mL..... | 121387 |
| pH4.01 Buffer, 200mL..... | 121381 |
| 2.76mS/cm Conductivity Standard, 200mL..... | 122306 |
| Battery Charger..... | 130009 |
| Manual..... | 130050 |

90FL-T**Part No****5 metre bundle 126105/5:**

| | |
|---|----------|
| 90- FLT including 5m cables & sensors..... | 126105/5 |
|---|----------|

5 metre Option Includes

| | |
|---|--------|
| Submersible pH, sensor, 5m cable..... | 111224 |
| ORP, Submersible, 5m..... | 111259 |
| k=1 Conductivity/Temperature Sensor, 5m..... | 122196 |
| YSI 5739 Dissolved Oxygen Sensor (no cable).... | 123204 |
| 5m cable for dissolved oxygen sensor..... | 123219 |
| Turbidity Sensor, no cable..... | 125196 |
| 5m cable for turbidity sensor..... | 125187 |
| pH7.00 Buffer, 200mL..... | 121387 |
| pH4.01 Buffer, 200mL..... | 121381 |
| 2.76mS/cm Conductivity Standard, 200mL..... | 122306 |
| 90 NTU Diluted Standard, 200 mL..... | 125216 |
| 900 NTU Diluted Standard, 200mL..... | 125220 |
| Black wide neck jars for calibration x 2..... | 125300 |
| Battery Charger..... | 130009 |
| Manual..... | 130050 |

Same Price Interchange Option:**Choose between k=0.1, k=1 and k=10 Conductivity Sensor**

| | |
|--|--------|
| k=10 Conductivity/Temperature Sensor, 5m..... | 122218 |
| K=0.1 Conductivity/Temperature Sensor, 5m..... | 122197 |

Options and Accessories**pH Sensor Upgrade: difficult samples such as meat, dairy, slurries...**

| | |
|--------------------------------|----------|
| pH, Intermediate Junc, 5m..... | 121200/5 |
|--------------------------------|----------|

ORP Sensor for difficult samples & ORP Calibration Standard:

| | |
|---------------------------------|--------|
| ORP, Intermediate Junc, 5m..... | 121267 |
| ORP Calibration Solution..... | 121309 |

Dissolved Oxygen Field Stirrer:

| | |
|---|--------|
| YSI 5739 Dissolved Oxygen Sensor Stirrer..... | 123306 |
|---|--------|

BOD Dissolved Oxygen Sensors:

| | |
|--|--------|
| YSI non-stirring BOD Sensor (1.5m cable)..... | 123214 |
| YSI self-stirring BOD Sensor (1.5m cable)..... | 123213 |

Dissolved Oxygen Sensor Maintenance:**YSI5739 Field Sensor & Non Stirring BOD Sensor**

| | |
|---------------------------------------|--------|
| Membrane & filling solution kit..... | 123300 |
| Filling Solution only, 45mL..... | 123303 |
| Zero calibration Sodium Sulphite..... | 123302 |
| Rejuvenation kit..... | 123037 |

Diaphragm replacement kit.....123304
(Above for YSI5739 Field Sensor Only)

YSI Self-Stirring BOD Sensor

Membrane Cap Kit.....123308

Temperature Sensor:

Temperature Sensor, 5m cable.....124210

Sensor Holders:

Sensor holder for 90FL & 90FL-MV, 5m cable.....121343

Sensor holder for 90FL-T, 5m cable.....121345

Cable Extension:

Extra cable, per metre.....130040

Computer Interface:

RS232 serial port cable to connect to computer.130015

Serial to USB adaptor cable (used with 130015).130087

WinTPS Software for Windows.....130086

Power options:

12V Solar charging panel.....130012

12V Car cigarette lighter lead.....130013

Clip lead for external 12V battery.....130024

Carry case:

Waterproof carry case.....130058

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 [Download the full colour 90 Series Brochure \(1.45 MB PDF\).](#)

 [Download the manual for the 90-FL.](#)

 [Download the manual for the 90-FLMV.](#)

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TPS reserves the right to change any part of this specification without notice.

Version 6.2

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