



# Pool and Spa Sanitising Systems

easyCHEM Series

poolCHEM Series





## About TPS

TPS has been designing and manufacturing instruments and sensors in Australia since 1968. We have extensive experience in many types of instrumentation from precision laboratory equipment to industrial process control. Our experience extends to our swimming pool sanitisers, which we have been producing for over 20 years.

At TPS, our aim is to provide you with the best quality, service and value for money and the TPS Quality System has been independently certified in accordance with the AS/NZS ISO 9001:2008 standard.

## Liquid Chlorine instead of salt?

A salt chlorinator produces Chlorine from the salt dissolved in pool water, producing the same amount of Chlorine every day regardless of weather conditions or bather load. TPS pool sanitisers continuously monitor and control Chlorine concentration by pumping liquid chlorine to maintain the required set point. So even on a hot summer day with all the neighbourhood kids in the pool, an easyCHEM sanitiser will maintain healthy, sanitary water.

## Peristaltic Dosing Pumps

Peristaltic dosing pumps are the most reliable way of dosing liquid Chlorine and Acid. The chemical being dosed is never in contact with any pump components other than the squeeze tube. Peristaltic dosing pumps can also pump against moderate pressures, so they can be installed in the pool return line, after the filter, heater or any other in-line equipment. The service life of these devices is therefore considerably extended. Peristaltic pumps are self priming and will not be damaged if they run dry.

## Quick and easy to install

The easyCHEM Series are supplied with an installation guide for quick and easy installation. Control settings are preset for 5,000, 20,000, 50,000 and 100,000 litre pool installations, so the controllers can simply be installed and switched on. All models are supplied with a sensor / injection Tee for 40 and 50mm PVC pipe.

## Inbuilt Intelligence

easyCHEM and poolCHEM models feature Shut-Off and Set Point alarms. The Shut-Off alarm detects when a pump has been dosing for too long without reaching a pH or ORP set point. The beeper sounds, providing a warning of events such as an empty chemical drum or a system fault. The Set-Point alarm sounds when a pH or ORP reading is outside of allowable limits. This can prevent problems before they become serious.

## Automated Pool Pump Timer

The easyCHEM 220, 660, 770 & 880 are fitted with a Pool Pump Timer Output. The timer uses the calendar clock to regulate the operation of the pool pump and has a battery back-up in case of power failure. The standard timer program runs the pump for two 4 hour cycles per day in Summer and one 4 hour cycle in Winter. The dates and cycles for Summer and Winter can be fully customised to your requirements.

## Advanced poolCHEM Series Features

The poolCHEM Series have additional features such as Good Laboratory Practices (GLP), Automatic Data Logging and Computer Interfacing. The poolCHEM Series allows you to comply with health and other regulations by providing a computer record or printout of calibration and measurement data, complete with dates and times. The poolCHEM Series also has password access protection to change calibration data or set-up information.

## Instruments at a Glance

Model	ORP / pH Readout	Temperature Readout	Salinity / TDS Readout	Control Method	Pool Pump Timer Output	Pool Pump Sensor
easyCHEM 100				1 x Inbuilt 1.8 L/Hr Peristaltic Pump		
easyCHEM 220	ORP OR pH			1 x Inbuilt 1.8 L/Hr Peristaltic Pump	●	
easyCHEM 660	ORP AND pH			1 x Inbuilt 1.8 L/Hr Peristaltic Pump, 1 x Mains Power Control Output	●	
easyCHEM 770	ORP AND pH			2 x Inbuilt 1.8 L/Hr Peristaltic Pumps	●	
easyCHEM 880	ORP AND pH			1 x Inbuilt 1.8 L/Hr Chlorine Pump 1 x External Solenoid Valve for CO <sub>2</sub>	●	
poolCHEM	ORP AND pH	●		2 x 24V DC Control Outputs		●
poolCHEM - 1	ORP AND pH	●		1 x Inbuilt 6 L/Hr Peristaltic Pump, 1 x 24V DC Control Outputs		●
poolCHEM - 2	ORP AND pH	●		2 x Inbuilt 6 L/Hr Peristaltic Pumps		●
Aqua-TP	ORP AND pH	●	●	(Portable Pool Water Tester)		





- Feeder for liquid Chlorine, Acid or other chemicals.
- Very simple to operate.
- Pump rate can be set from 1 to 99 to fine-tune dose rate. Set to "00" to switch off, and "On" to pump continuously.
- Highly reliable peristaltic pump.
- Piggy-back power plug for pool pump, ensures feeder only operates when pool pump is on.
- Easy to install injection Tee.



- Automatic controller for liquid Chlorine OR Acid.
- 1 inbuilt peristaltic pump.
- Digital timer output for pool pump, with automatic adjustment for Summer and Winter cycles.
- Digital readout of ORP or pH.
- Factory-supplied as ORP or pH, but can be re-configured by supplier (sensor must also be changed).
- Shut-off Alarm when dosing pump has run too long without reaching Set-point. Prevents over dosing.
- Set-point Alarm in case ORP or pH readings exceed normal levels.
- Super-chlorinate function (Chlorine version only).
- Filter backwash and pump to waste function.



- Automatic controller for Chlorine and liquid Acid.
- 1 inbuilt peristaltic pump and 1 mains power control output.
- Inbuilt pump adds Acid and output controls Salt Chlorinator or larger Chlorine dosing pump.
- Digital timer output for pool pump, with automatic adjustment for Summer and Winter cycles.
- Digital readout of ORP and pH.
- Shut-off Alarm when dosing pump has run too long without reaching Set-point. Prevents over dosing.
- Set-point Alarm if ORP or pH readings exceed allowable levels.
- Super-chlorinate function.
- Filter backwash and pump to waste function.



## easyCHEM 770

## ORP and pH Controller with Pool Pump Timer



- Automatic controller for liquid Chlorine and Acid.
- 2 inbuilt peristaltic pumps.
- Digital timer output for pool pump, with automatic adjustment for Summer and Winter cycles.
- Digital readout of ORP and pH.
- Shut-off Alarm when dosing pump has run too long without reaching Set-point. Prevents over dosing.
- Set-point Alarm in case ORP or pH readings exceed normal levels.
- Super-chlorinate function.
- Filter backwash and pump to waste function.

## easyCHEM 880

## ORP and pH Controller with Pool Pump Timer and CO2 Valve Control



- Automatic controller for liquid Chlorine and CO2 gas (for pH).
- 1 inbuilt peristaltic pump for Chlorine control and an external solenoid valve for CO<sub>2</sub> (pH) control.
- Digital timer output for pool pump, with automatic adjustment for Summer and Winter cycles.
- Digital readout of ORP and pH.
- Shut-off Alarm when dosing pump has run too long without reaching Set-point. Prevents over dosing.
- Set-point Alarm in case ORP or pH readings exceed normal levels.
- Super-chlorinate function.
- Filter backwash and pump to waste function.

## Aqua-TP

## Portable TDS, Salinity, pH, ORP and Temperature Meter



- Display shows up to three readings simultaneously.
- Fully waterproof, portable design - can be used in the shop or on site.
- One-touch calibration.
- Fold-out stand for bench use.
- Operates on a standard 9 Volt Alkaline battery.
- Supplied with sensors and all accessories required for calibration and operation. (ORP sensor is optional).



## Ordering Information

*easyCHEM's are supplied with all sensors and accessories required for installation and operation.*

<b>easyCHEM Series</b>	Part No
easyCHEM 100 for Chlorine .....	117101
easyCHEM 100 for Acid .....	117102
easyCHEM 220 for Chlorine .....	117221
easyCHEM 220 for Acid .....	117222
easyCHEM 660 .....	117661
easyCHEM 770 .....	117771
easyCHEM 880 .....	117881

### PoolCHEM Series

poolCHEM .....	111113
poolCHEM-1 .....	111114
poolCHEM-2 .....	111115

### Options for poolCHEM Series

#### Computer Interface

RS232 Serial Interface Cable, 2m .....	130041
Serial to USB adaptor cable .....	130087
WinTPS communication software for Windows 95 & later ..	130086

### Aqua-TP

Aqua-TP .....	121136/1
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### Options for Aqua-TP

ORP sensor for Aqua-TP, 1m .....	121262
ZoBell 231mV ORP Standard, 100mL ea of Parts A & B ....	121309
Aluminium carry case, holds meter, sensors & standards ..	130057

### Spares and Accessories

#### Plumbing Spares

Injection Tee for easyCHEM 100 .....	117901
Sensor / Injection Tee for easyCHEM 220 .....	125902
Sensor / Injection Tee for easyCHEM 660, 770 & poolCHEM ..	125903
Sensor / Injection Tee for easyCHEM 880 .....	197906

#### Peristaltic Pump Spares

Peristaltic pump input / output tube, 4m .....	116360
Drum lid .....	116362
Tube weight for chemical drum .....	116354
Standard pump squeeze tube assembly, 1.8L/Hr .....	116353
Large pump squeeze tube assembly, 6.1L/Hr .....	116352
Pump squeeze tube lubricant, 3cc syringe .....	130103

#### CO<sub>2</sub> Kit

CO <sub>2</sub> Kit, including solenoid valve, regulator & accessories ..	117909
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#### Sensors

pH and ORP Probe, Pool, 6 Pin connector, 1.8m .....	121290
pH Probe, Pool, 6 Pin connector, 1.8m .....	121292
ORP Probe, Pool, 6 Pin connector, 1.8m .....	121291
Temperature Sensor for poolCHEM Series, 2m .....	124230
Pool pump sensor for poolCHEM Series, 2m .....	130102
pH sensor for Aqua-TP, 1m .....	121207
Salinity/TDS/Temperature sensor for Aqua-TP, 1m .....	122201

#### Calibration Solutions

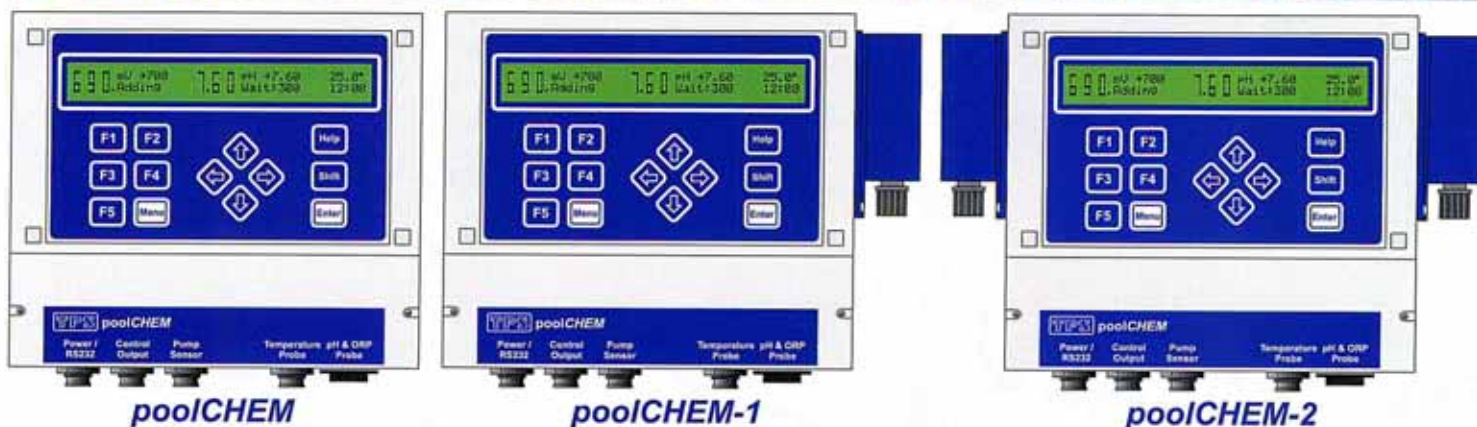
ZoBell 229mV ORP Standard, 100mL ea of Parts A & B ....	121309
pH7.00 Buffer, 200mL .....	121387
pH4.01 Buffer, 200mL .....	121381
Salinity/TDS Standard, 2.76 mS/cm, 200mL for Aqua-TP ..	122306

#### Power Accessories

Dual 24V DC control output cable for poolCHEM, 2m .....	130054
Single 24V DC control output cable for poolCHEM-1, 2m ..	130053
poolCHEM power adaptor, 240V AC (Australia) .....	130106

## poolCHEM Series

## ORP and pH Controllers with Advanced Features



- *poolCHEM has 2 x 24V DC outputs to control larger relays that switch dosing pumps, valves etc.*
- *poolCHEM-1 has 1 x inbuilt pump and 1 x 24V DC output, which can be assigned to control ORP or pH.*
- *poolCHEM-2 has 2 x inbuilt peristaltic pumps to control Chlorine and Acid.*
- *Simultaneous readout of ORP, pH, Temperature, Time, Set Points and Status.*
- *Shut-off Alarm detects when a pump has been dosing too long without reaching a pH or ORP Set-point.*
- *Set-point Alarm sounds when a pH or ORP reading is outside of allowable limits.*
- *Memory for 2300 stored readings with automatic data logging function.*
- *RS232 Serial interface for data transfer to a computer. Serial cable, USB to serial adaptor cable and software for Windows are optional.*
- *Pool Pump sensor only allows automatic dosing when main pool pump is operating.*
- *Quick-Dose function.*
- *Password protection, so only qualified users can change set-up or calibration.*
- *Good Laboratory Practices (GLP) function stores calibration data, date and time.*



## Specifications

### ORP

Range . . . . . 0 to 1000 mV  
Resolution . . . . . 1 mV  
Accuracy . . . . . +/-1 mV

### pH

Range . . . . . 2.00 to 12.00 pH  
Resolution . . . . . 0.01 pH  
Accuracy . . . . . +/-0.02 pH

### Temperature (poolCHEM & Aqua-TP only)

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

### TDS (Aqua-TP only)

Range . . . . . 0 to 9990 ppM TDS  
Resolution . . . . . 10 ppM TDS  
Accuracy . . . . . +/-10 ppM TDS

### Salinity (Aqua-TP only)

Range . . . . . 0 to 1.00 % Salt  
Resolution . . . . . 0.01 % Salt  
Accuracy . . . . . +/-0.01 % Salt

### Calibration

Calibration function is provided for all sensor measurements. (Not applicable to easyCHEM 100.)

### Peristaltic Pumps

- 2 roller, weatherproof peristaltic pumps.
  - Chemical resistant Santoprene pump tubing
  - 2 squeeze tube sizes - small 1.8 L/Hr and large 6.1 L/Hr.
- Note: for easyCHEM 100, the above flow rate is only when set to "FULL".

### Control Output

**easyCHEM 660**  
220/240V AC, 2Amps max.

**poolCHEM & poolCHEM-1**  
24V DC, 150 mA max per output.

### Calendar Clock

24 Hour clock with time and date. Battery backup in case of power failure will last for 10 years. Not applicable to easyCHEM 100.

### Timer Output for Pool Pump

**easyCHEM 220, 660, 770 & 880**  
Digital timer output for pool pump, with automatic adjustment for Summer and Winter cycles. 220 / 240V AC, 10Amps with fuse.

### Enclosure

Tough ABS enclosures, waterproof to IP65. Keypad and sensor connectors waterproof to IP65. Where fitted, mains output sockets and fuse holders are waterproof to IP25.

### Display

**easyCHEM 100**  
12.7mm high LED

**easyCHEM 220, 660, 770 & 880**  
32 character back lit LCD with user friendly menu and help system.

### poolCHEM Series

80 character LCD with user friendly menu and help system.  
Large digit or graphic display modes.

### Aqua-TP

24 character LCD with user-friendly text prompting.

### Power

**easyCHEM Series**  
220/240 V AC, 5 watts max for controller.

**poolCHEM Series**  
24V DC via AC/DC Adaptor supplied with the unit.

### Aqua-TP

9V Alkaline battery for 70+ hours. Battery saver function can be user-set to switch the unit off if no key has been pressed for 5 minutes.

### Dimensions

**easyCHEM 100**  
200 x 140 x 110 mm

**easyCHEM 220, 660 & 770**  
256 x 230 x 130 mm

**poolCHEM Series**  
280 x 195 x 95 mm

**Aqua-TP**  
165 x 85 x 35 mm

### Shipping Weight

1.5 to 5 kg, depending on model.

### Environment

Temperature . . . . . 0 to 45 °C  
Humidity . . . . . 0 to 95% R.H.

### Extra Specifications for poolCHEM Series only

#### Good Laboratory Practices

All calibration and user-adjustable set-up information is stored in memory, and can be recalled on the display at any time. This information can also be printed or downloaded to a computer when the optional Computer Interface Cables are ordered.

The unit's serial number is stored in memory. This is displayed at turn-on and included with GLP information.

GLP gives the user the ability to provide evidence of calibration and instrument set-up at the touch of a button. TPS makes it easier for you to comply with health and regulatory requirements.

#### Datalogging

**Memory**  
2300 readings, including date and time.

**Notepad**  
Records reading into memory at the touch of a button.

**Automatic Datalogging**  
User selectable for one reading every...

1, 2, 5, 10, 15, 20 or 30 minutes  
or every...  
1, 2, 3, 4, 6, 8, 12 or 24 hours

#### RS232 Serial Interface

300, 9600 and 19200 Baud. 8 Bits, No Parity, 1 Stop Bit, XON/XOFF Protocol.

The poolCHEM series comes standard with a RS232 serial port (cable sold separately). All readings stored in memory can be downloaded to a PC. The RS232 port also allows the poolCHEM series to log directly to a PC. WinTPS communication software for Windows 95 and later is available.



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