



**MINICHEM**

# *PROCESS MONITORS*

*pH*  
*Redox*

*Conductivity*  
*Salinity / TDS*

*Dissolved*  
*Oxygen*

*Temperature*

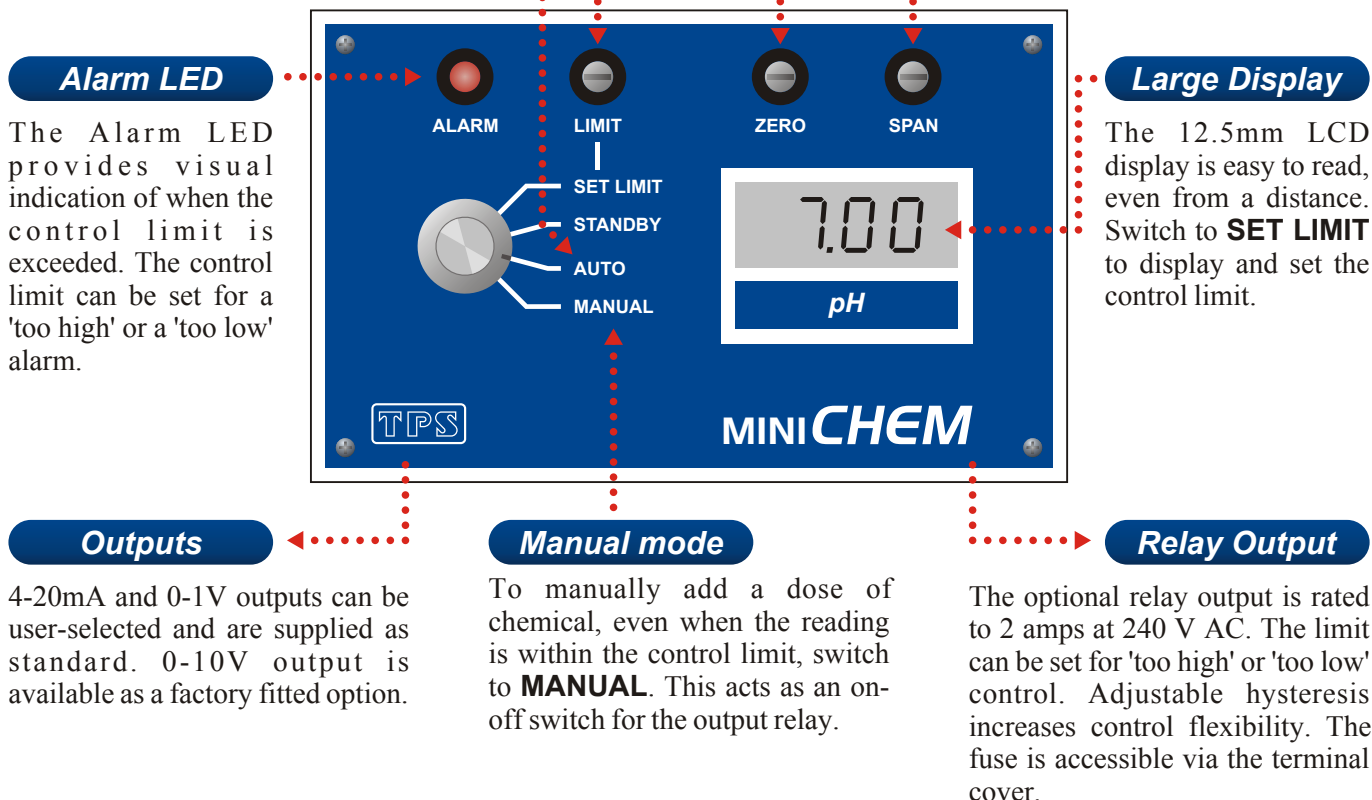


[www.tps.com.au](http://www.tps.com.au)



# 3 steps to automatic control...

1. **Calibrate**
2. **Set the control limit**
3. **Switch to Auto**



## MINICHEM Series

The **MINICHEM** series is the perfect solution for many process monitoring applications.

All **MINICHEM** units are easy to install. The enclosure is waterproof to IP65, so a separate cabinet is not required. All controls can be accessed via the hinged, clear cover. The large LCD display is easy to read, even from a distance.

The **MINICHEM** series is designed for maximum flexibility. Current and voltage outputs are provided as standard. A relay output is optionally available. The front panel alarm lamp provides clear visual indication when the control limit has been exceeded.

The **MINICHEM** series is the best value for money range of process monitors available today. They are

ideal for industry, swimming pools, reverse osmosis, aquaculture, etc.

For even greater output flexibility, ask about the **420 ToolBox**. This module provides such features as reversing the current or voltage signal, optional second control relay, RS232 interface or pulsed output.

For a total solution to your control requirements, TPS also offers a range of peristaltic pumps.

The **MINICHEM** series is proudly designed and manufactured in Australia. The TPS Quality System has been certified in accordance with AS/NZS ISO9001 standards. You can always be assured of the best quality, service and value for money.

## General Specifications

**Enclosure** ..... Polycarbonate,  
..... waterproof to IP65

**Display** ..... 12.5mm LCD

**Outputs** ..... 4 to 20 mA  
..... (500 Ohms max load)  
..... 0 to 1 V DC  
..... 0 to 10 V DC (optional)

### Isolation

Galvanic isolation of sensor inputs for all models.

Current and voltage outputs are not isolated.

**Power** ..... 240V AC, 50/60 Hz  
..... (120V AC optional)

**Dimensions** .... 172x160x71mm

### Mass

Instrument only ..... Approx 800 g  
Full Kit ..... Approx 1.5 kg

### Instrument Operating Environment

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

# Specifications and Ordering Information

## MINICHEM pH

### Specifications

**Range** ..... 0 to 14.00 pH  
**Resolution** ..... 0.01 pH  
**Accuracy** ..... +/-0.01 pH  
**Linearity** ..... +/-0.01 pH  
**Repeatability** ..... +/-0.01 pH  
**Ambient Drift** .. <0.01 pH per 10°C  
..... change  
**Long Term Drift** .. <0.1% per year  
**Temperature Compensation**  
Automatic, 0 to 100 °C  
**Asymmetry Range** ..... +/- 1 pH  
**Slope Range** ..... 80 to 110%  
**Input Impedance** .. >3x10<sup>12</sup> Ohms  
**Common Mode**  
**Rejection** ..... 120dB

### Ordering Information

**miniCHEM - pH** .... 111140

#### Kit Includes:

pH6.88 Buffer, 200mL ..... 121306  
pH4.00 Buffer, 200mL ..... 121381  
Handbook ..... 130050

#### Options:

Relay control output ..... 130342  
Loop-powered remote LCD . 130080  
12V DC Power option. .... 130072

#### "Dip" mounted sensors and submersible assembly:

Submersible, pH Sensor, 5m . 111228  
Intermediate Junction pH. . . 111227  
(for use in slurries, sewage etc)  
ATC Probe, #316 s/s, 5m .... 111275  
Submersible Assembly ..... 111303  
Extended cable / metre ..... 130040

#### Screw-in sensors and adaptor for 40mm PVC pipe:

Screw-in pH Sensor, 5m .... 111244  
Screw-in ATC Sensor, 5m. . . 111265  
Screw-in thread adaptor .... 111305  
Extended cable / metre ..... 130040

See brochure number B-1 for full  
details on industrial pH & ATC  
sensors.

## MINICHEM Redox

### Specifications

**Range** ..... 0 to +1000 mV  
..... (0 to -1000 mV optional)  
**Resolution** ..... 1 mV  
**Accuracy** ..... +/-1 mV  
**Linearity** ..... +/-1 mV  
**Repeatability** ..... +/-1 mV  
**Ambient Drift** .... <0.02% span/°C  
**Long Term Drift** .. <0.1% per year  
**Zero Range** ..... +/-100 mV  
**Span Range** ..... 80 to 110%  
**Input Impedance** .. >3x10<sup>12</sup> Ohms  
**Common Mode**  
**Rejection** ..... 120dB

### Ordering Information

**miniCHEM - Redox** .. 111142

#### Kit Includes:

ZoBell Standard ..... 121309  
(200mL each of Part A and Part B)  
Handbook ..... 130050

#### Options:

Relay control output ..... 130342  
Loop-powered remote LCD . 130080  
12V DC Power option. .... 130072

#### "Dip" mounted sensors and submersible assembly:

Submersible, Redox, 5m .... 111260  
Intermediate Junction Redox. 121267  
(for use in slurries, sewage etc)  
Earth Rod, #316 s/s, 5m. .... 121360  
Submersible Assembly ..... 111303  
Extended cable / metre ..... 130040

#### Screw-in sensors and adaptor for 40mm PVC pipe:

Screw-in Redox Sensor, 5m . 111262  
Earth Rod, #316 s/s, 5m ..... 121360  
Screw-in thread adaptor .... 111305  
Extended cable / metre ..... 130040

See brochure number B-2 for full  
details on industrial Redox (ORP)  
sensors.

## MINICHEM Temperature

### Specifications

**Range** ..... 0 to 199.9 °C  
..... (sensor limit 120 °C)  
**Resolution** ..... 0.1 °C  
**Accuracy** ..... +/-0.1 °C  
**Linearity** ..... +/-0.1 °C  
**Repeatability** ..... +/-0.1 °C  
**Ambient Drift** .... <0.02% span/°C  
**Long Term Drift** .. <0.1% per year  
**Zero Range** ..... +/-10 °C

### Ordering Information

**miniCHEM - Temp** ... 114140

#### Kit Includes:

Handbook ..... 130050

#### Options:

Relay control output ..... 130342  
Loop-powered remote LCD . 130080  
12V DC Power option. .... 130072

#### "Dip" mounted sensor:

Silicon Temp Sensor, ..... 114200  
#316 s/s body, 5m  
Extended cable / metre ..... 130040

#### Screw-in sensor and adaptor for 40mm PVC pipe:

Screw-in Silicon Temp ..... 114201  
Sensor, #316 s/s, 5m  
Screw-in thread adaptor .... 111305  
Extended cable / metre ..... 130040

See brochure number B-1 for full  
details on industrial temperature  
sensors.

# MINICHEM

## Dissolved Oxygen

### Specifications

**Ranges** . . . . . 0 to 199.9% Saturation  
 . . . . . OR  
 . . . . . 0 to 19.99 ppM (mg/L)  
 . . . . . (Factory set)

**Resolution** . . . . . 0.1 % Saturation  
 . . . . . OR  
 . . . . . 0.01 ppM (mg/L)

**Accuracy** . . . . . +/-0.2% of full scale

**Linearity** . . . . . +/-0.1%

**Repeatability** . . . . . +/-0.2%

**Ambient Drift** . . . . . <0.05% span/°C

**Long Term Drift** . . . . . <0.2% per year

**Temperature Compensation**  
 Dual automatic temperature compensation system, 0 to 50 °C (sensor limit).

**Zero Range** . . . . . +/-10%

**Span Range** . . . . . 70 to 130%

**Sensor**  
 Polarographic sensor with inbuilt ATC sensor.  
 Factory set for TPS ED1M or EDYSI dissolved oxygen sensor.

### Ordering Information

**miniCHEM - DO . . . . . 113140**

#### Standard Kit Includes:

Handbook . . . . . 130050

#### Options:

Relay control output . . . . . 130342  
 Loop-powered remote LCD . 130080  
 12V DC Power option. . . . . 130072

#### TPS ED1M DO<sub>2</sub> sensor and cable (Submersible to 3m max)

ED1M DO<sub>2</sub> Sensor, . . . . . 123440  
 (NO CABLE)  
 5m cable for ED1M. . . . . 123236  
 Extended cable / metre . . . . . 130040

#### YSI DO<sub>2</sub> sensor and cable

EDYSI DO<sub>2</sub> Sensor, . . . . . 123204  
 (NO CABLE)  
 5m cable for EDYSI . . . . . 123210  
 Extended cable / metre . . . . . 130040

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## Conductivity

### Specifications

**Ranges**  
 k=0.1 Sensor . . . . . 0 to 19.99 uS/cm  
 . . . . . 0 to 199.9 uS/cm  
 . . . . . 0 to 1999 uS/cm

k=1.0 Sensor . . . . . 0 to 199.9 uS/cm  
 . . . . . 0 to 1999 uS/cm  
 . . . . . 0 to 19.99 mS/cm

k=10 Sensor . . . . . 0 to 1999 uS/cm  
 . . . . . 0 to 19.99 mS/cm  
 . . . . . 0 to 199.9 mS/cm

**Resolution** . . . . . 0.1% of full scale

**Accuracy** . . . . . +/-0.2% of full scale

**Linearity** . . . . . +/-0.05% of full scale

**Repeatability** +/-0.05% of full scale

**Ambient Drift** . . . . . <0.02%/°C

**Long Term Drift** . . . . . <0.1% per year

**Temperature Compensation**  
 Automatic, 0 to 100 °C

**Zero Range** . . . . . +/-5%

**Span Range** . . . . . 70 to 130%

**Sensors** . . . . . Platinised Platinum  
 . . . . . k=0.1, k=1.0 or k=10.

### Ordering Information

**miniCHEM - Cond . . . 112140**

#### Standard Kit Includes:

Handbook . . . . . 130050  
 Conductivity standard to suit customer-specified range.

#### Options:

Relay control output . . . . . 130342  
 Loop-powered remote LCD . 130080  
 12V DC Power option. . . . . 130072  
 Custom Conductivity Std . . . 122310

#### Conductivity Sensors

k=0.1 Industrial Sensor, 5m . 112205  
 k=1.0 Industrial Sensor, 5m . 112206  
 k=10 Industrial Sensor, 5m . 112207  
 Extended cable / metre . . . . . 130040

#### Flow-through chamber

Cond flow chamber . . . . . 112301  
 1/2" BSP input and output ports

# MINICHEM

## Salinity / TDS

### Specifications

**Ranges**  
 k=0.1 Sensor . . . . . 0 to 10.00 ppM  
 . . . . . 0 to 100.0 ppM  
 . . . . . 0 to 1000 ppM

k=1.0 Sensor . . . . . 0 to 100.0 ppM  
 . . . . . 0 to 1000 ppM  
 . . . . . 0 to 10.00 ppK

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

**Resolution** . . . . . 0.1% of full scale

**Accuracy** . . . . . +/-0.2% of full scale

**Linearity** . . . . . +/-0.05% of full scale

**Repeatability** +/-0.05% of full scale

**Ambient Drift** . . . . . <0.02%/°C

**Long Term Drift** . . . . . <0.1% per year

**Temperature Compensation**  
 Automatic, 0 to 100 °C

**Zero Range** . . . . . +/-5%

**Span Range** . . . . . 70 to 130%

**Sensors** . . . . . Platinised Platinum  
 . . . . . k=0.1, k=1.0 or k=10.

### Ordering Information

**miniCHEM - Salinity.. 112142**

#### Standard Kit Includes

Handbook . . . . . 130050  
 Salinity / TDS standard to suit customer-specified range.

#### Options

Relay control output . . . . . 130342  
 Loop-powered remote LCD . 130080  
 12V DC Power option. . . . . 130072  
 Custom Salinity Std . . . . . 122310

#### Salinity/TDS Sensors

k=0.1 Industrial Sensor, 5m . 112205  
 k=1.0 Industrial Sensor, 5m . 112206  
 k=10 Industrial Sensor, 5m . 112207  
 Extended cable / metre . . . . . 130040

#### Flow-through chamber

Cond flow chamber . . . . . 112301  
 1/2" BSP input and output ports



A.B.N. 30 009 773 371  
 TPS reserves the right to change this specification without notice.  
 Version 2.01W, 13-May-2003

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