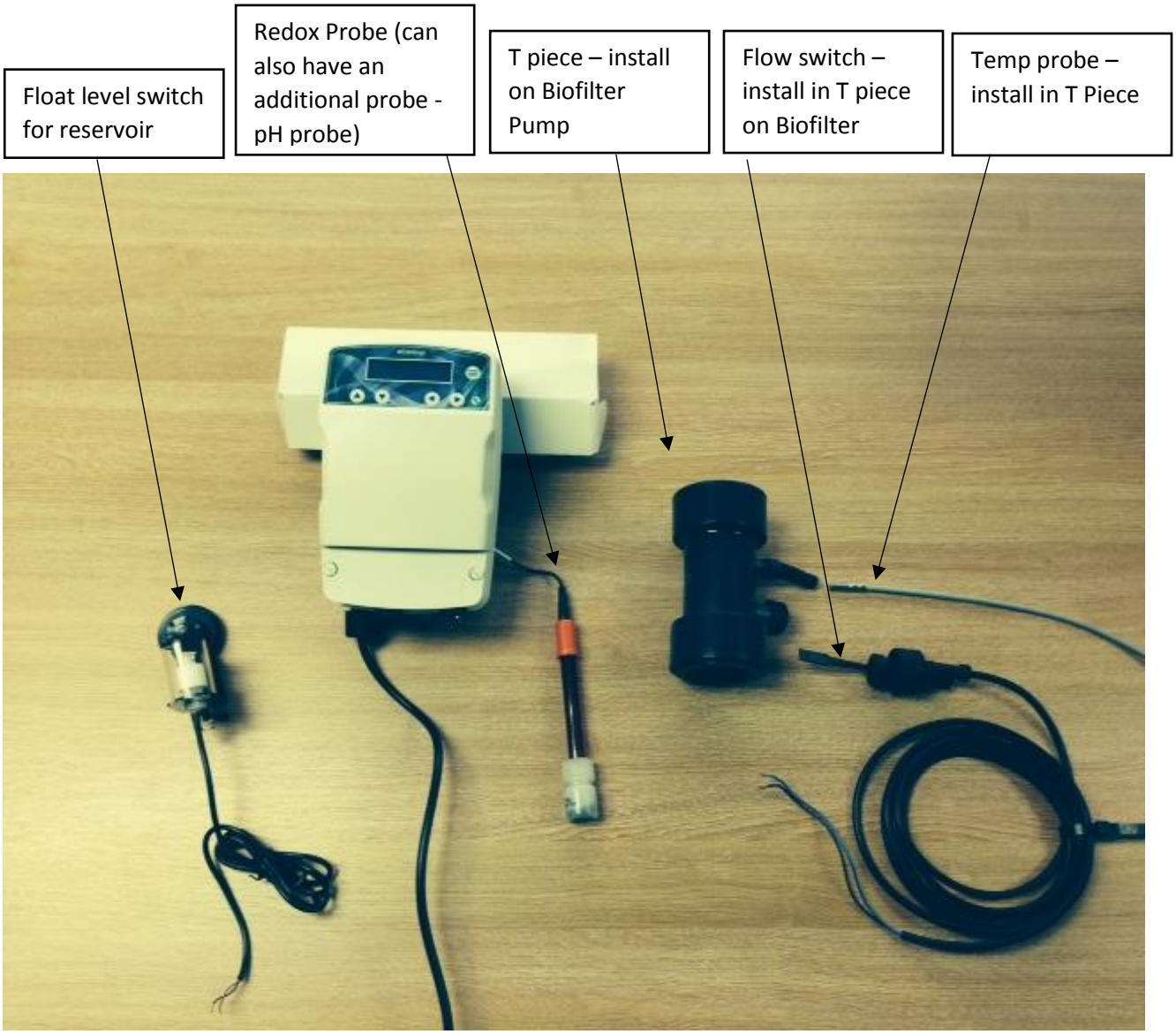
TMC™

Commercial

TMC Commercial Quick Set up Guide
Etratron eControl pH/Redox Controller

April 2016

Etatron eControl & ancillary components



TMC Code	Description
1631	Etatron eControl pH/Redox Controller
1603	Etatron REDOX Probe (5m cable)
5556	Etatron pH Probe (5m cable)
1635	2" T piece and flow switch assembly (5m cable) Min flow rate 3,000 l/hr
1637	Temp probe (5m cable)
9520	V2Auto Top Up Float Switch (5m Cable)

DIAGRAM OF ELECTRICAL CONNECTIONS TO PERIPHERALS

To connect the accessories and peripherals to the instrument remove the front cover "1", using a flat-tip screwdriver on the two plastic screws, to access the terminal board (see Fig. 4a).

The "3" terminal board features spring terminals (there are no screws) for quick connection of the cables: press with a small screwdriver at the "carved" square pin and insert the conductor previously stripped in the corresponding terminal. WARNING, do not overly tighten the screws, as this could damage the terminal board.

J8 Terminal Board	
N° Terminal	Description
1	Flow Switch/Level Input (-)
2	Flow Switch/Level Input (+)
3	PT100 (-) Input
4	PT100 Input (+)
5	mA1 Output (-)
6	mA1 Output (+)
7	*Not Connected*
8	*Not Connected*
9	*Not Connected*
10	Power Supply -5V. Pot. Probes
11	Power Supply +5V Pot. Probes
12	Alarm RL5 Relay (COM)
13	Alarm RL5 Relay (NO)
14	SET2 M1 RL2 Relay (COM)
15	SET2 M1 RL2 Relay (NO)
16	SET1 M1 RL1 Relay (COM)
17	SET1 M1 RL1 Relay (NO)

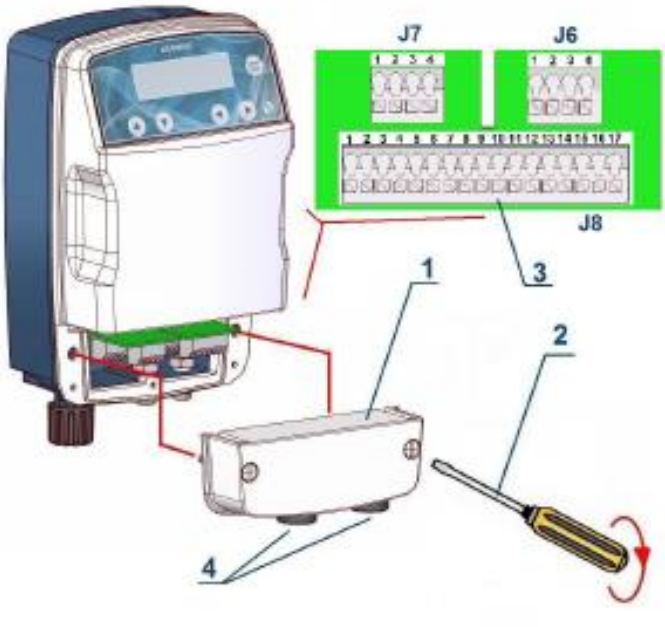


Fig. 4a – Terminal Board

The J6 and J7 terminals are mounted only on the 2-measurement version

N° Terminal	Description
J7 Terminal Board	
1	Flow Switch/Level Input (-)
2	Flow Switch/Level Input (+)
3	mA2 Output (-)
4	mA2 Output (+)
J6 Terminal Board	
1	SET2 M2 RL4 Relay (COM)
2	SET2 M2 RL4 Relay (NO)
3	SET1 M2 RL3 Relay (COM)
4	SET1 M2 RL3 Relay (NO)

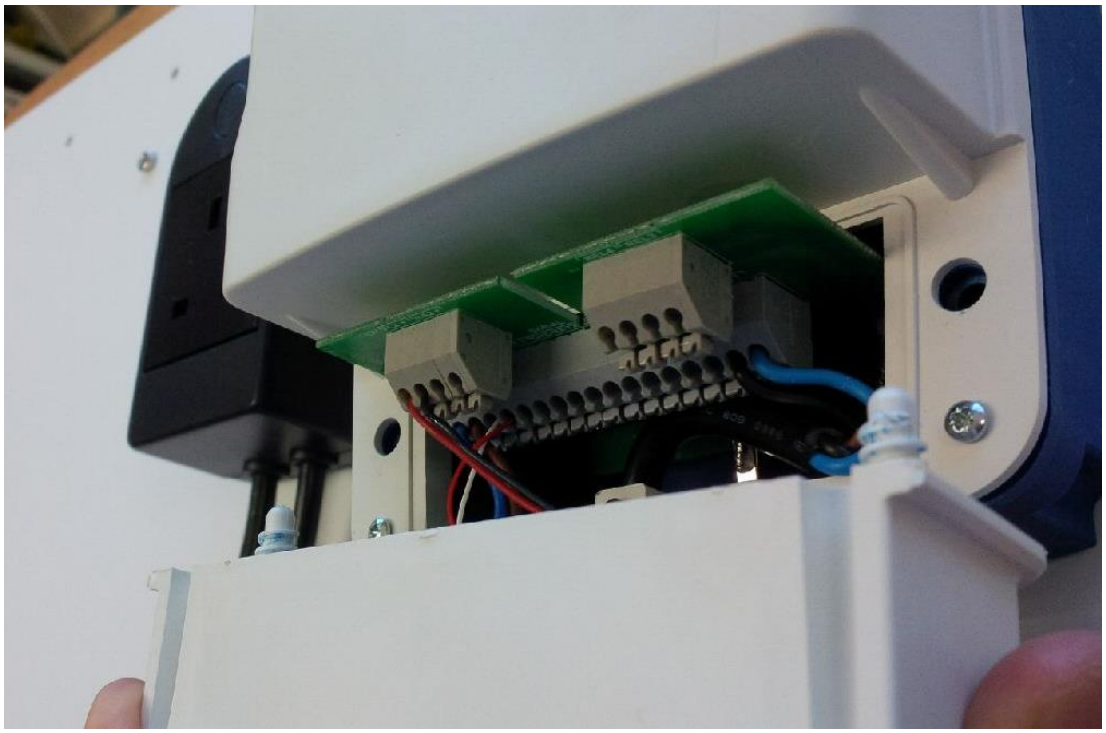
Fig. 4b – Measurement Inputs

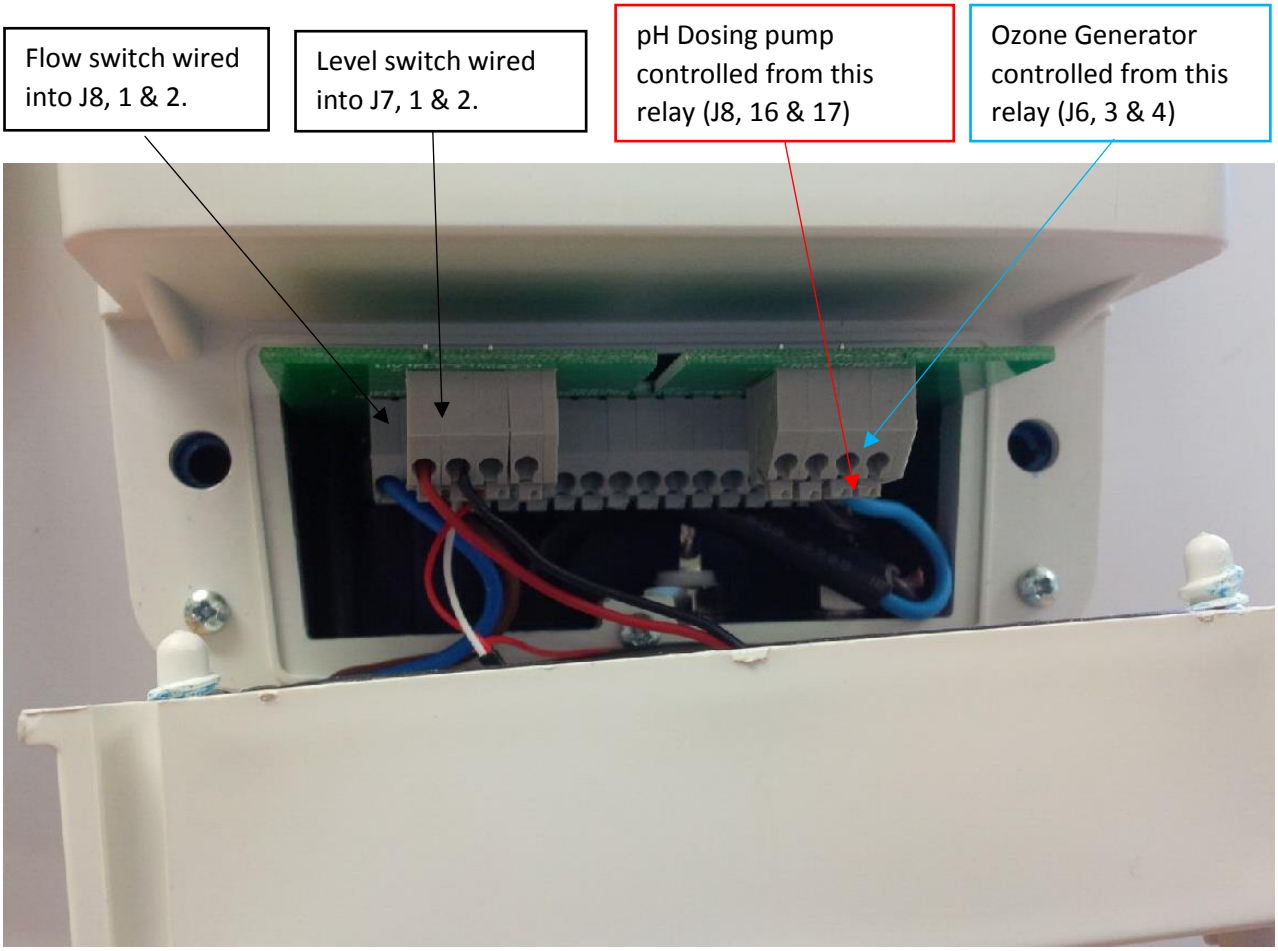
The connectors for the pH, RX, or Cl probe are placed in the lower part of the equipment as shown in fig. 4b. In the case of instrument with a single measurement channel only the measurement 1 input BNC connector is present (Fig. 4b).

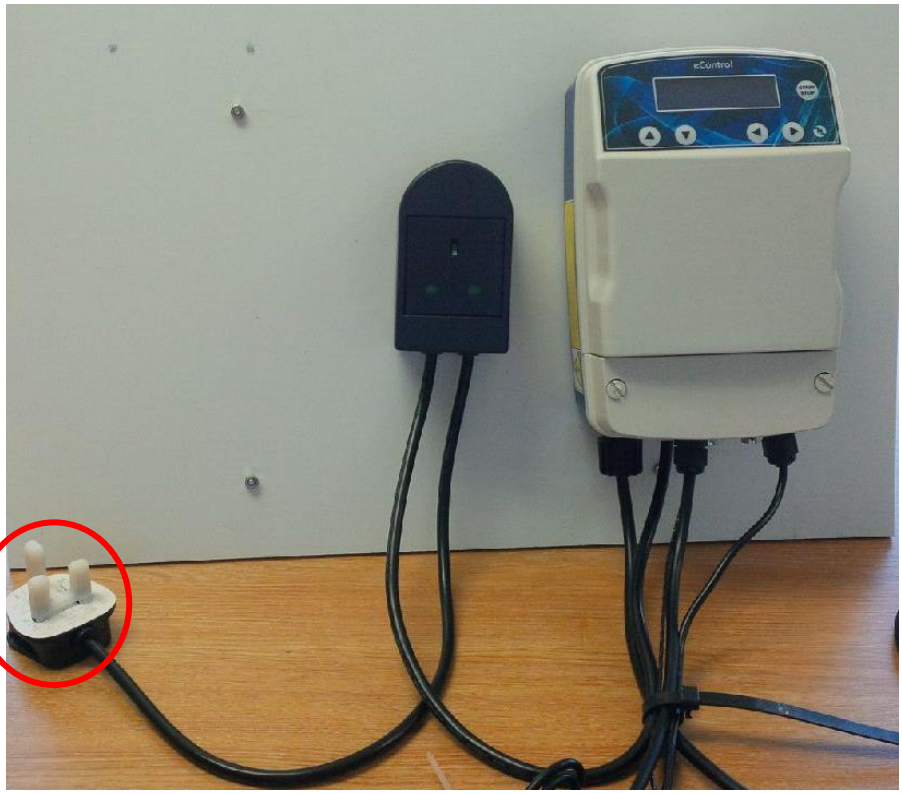
Left hand probe connection = MEASURE 1 (use for **pH**), control driven off Measure 1, Set Point 1, wire into Board J8 terminals 16 & 17.

Right hand probe connection = MEASURE 2 (use for **Redox**), control driven off Measure 2, Set Point 3, wire into Board J6 terminals 3 & 4.

eControl connections







Power socket (not supplied) for Ozone Generator / pH dosing pump, power derived from mains plug (circled in red), switched from Controller internal relays (4 available)

Control Panel

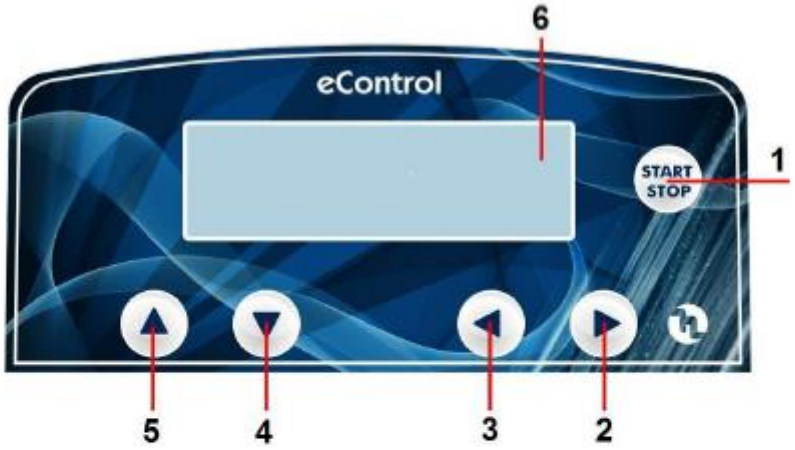


Fig. 3 – Control and Display Panel

1	Start and Stop Button
2	Right Values Button
3	Left Values Button
4	Menu Forward Button
5	Menu Back Button
6	Graphic Display containing the measurement values.

The display shows the M1 and M2 measurement values (for instruments with two channels). In measurement mode press the right and left arrow buttons to display the clock and any mA outputs.

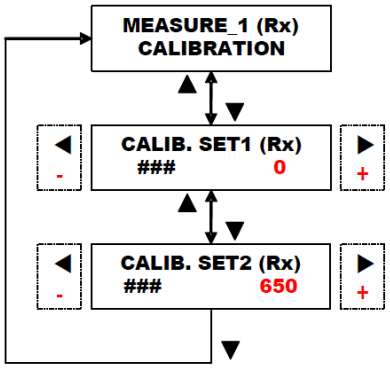
Setting up the Etatron eControl

1) To set up pH parameters and control
    a. Press Start / Stop
    Display reads [CONFIGURATION, **MEASURE 1 (pH)**]
    b. Press down arrow
    Display reads [MEASURE 1 (pH)] use left / right arrows and set to **[pH MODE]**
    c. Press down arrow
    Display reads [MEASURE 1 (pH)] use left / right arrows and set to **[SETPOINT 1]**
    d. Press down arrow
    Display reads [SETPOINT VALUE] use left / right arrows and set to **[8.20]** (note: 8.20 is for a marine application – change to suit required application set point)
    e. Press down arrow
    Display reads [OPERATION TYPE] use left / right arrows and set to **[ALKALINE]** (note: this is for a marine application and will affect the direction of control for this set point. This setting is for a marine application that will be using a dosing pump to dose a pH buffer to increase pH to set point 1 value above, and will switch dosing pump on when level drops below the set point value).
    f. Press down arrow
    Display reads [HYSTERESIS VALUE] use left / right arrows and set to **[0.10 pH]** (note: this sets a dead band" of 0.10 around the set point value e.g. if set point is 8.20, reading will need to fall below 8.10 if hysteresis is set to 0.10)
    g. Press down arrow
    Display reads [OPERATION MODE] use left / right arrows and set to **[MANUAL]**
    h. Press down arrow
    Display reads [MEASURE 1 (pH)] (SETPOINT 1] again (has scrolled back up to the top of this menu) use right arrow and set to **[SETPOINT 2]** …..follow steps 1d to 1h. Note, Setpoint 2 can be used to dose downwards to the set point by using a dosing pump and acidic solution or Solenoid valve on CO2 regulator to dose CO2 – for this, step 1e should be set to ACID, and use Terminals on board J8, 14 & 15.
    i. Once all parameters are set, press up arrow to the top of the menu, and press Star/Stop to take you to readings and ensure newly set parameters are saved.
2) pH Calibration
    a. Press Start / Stop
    Display reads [CONFIGURATION, **MEASURE 1 (pH)**]
    b. Press down arrow twice
    Display reads [MEASURE 1 (pH), SETPOINT 1]
    c. Press right arrow to get to [CALIBRATION]
    d. Press down arrow to enter Calibration mode
3) pH Temperature setting
    a. Press Start / Stop
    Display reads [CONFIGURATION, **MEASURE 1 (pH)**]
    b. Press down arrow twice
    Display reads [MEASURE 1 (pH), SETPOINT 1]
    c. Press right arrow to get to [TEMPERATURE]
    d. Press down arrow to enter Temperature – use this feature to set the temperature of the system water when no temperature probe is being used.

4) To set up REDOX parameters and control
    a. Press Start / Stop
       Display reads [CONFIGURATION, **MEASURE 1 (pH)**]
    b. Press right arrow
       Display reads [CONFIGURATION, **MEASURE 2 (Rx)**]
    c. Press down arrow
       Press left/right arrows so that display reads [MEASURE 2 (Rx)] **[Rx MODE]**
    d. Press down arrow
       Display reads [MEASURE 2 (Rx)] use left / right arrows and set to **[SETPOINT 3]**
    e. Press down arrow
       Display reads [SETPOINT VALUE] use left / right arrows and set to **[300mV]** (note: this is suggested set point for a marine application – change to suit required application set point, please ask if unsure to avoid overdosing of Ozone and any possible deleterious effect on biofilters or livestock)
    f. Press down arrow
       Display reads [OPERATION TYPE] use left / right arrows and set to **[OXIDANT** (note: this is for a marine application and will affect the direction of control for this set point. This setting is for a marine application that will be using an ozone generator to dose ozone which will increase the mV value to set point 1 value preset above, and will switch dosing pump on when level drops below the set point value).
    g. Press down arrow
       Display reads [HYSTERESIS VALUE] use left / right arrows and set to **[10 mV]** (note: this sets a dead band" of 10 around the set point value e.g. if set point is 300, reading will need to fall below 290 if hysteresis is set to 10)
    h. Press down arrow
       Display reads [OPERATION MODE] use left / right arrows and set to **[MANUAL]**
    i. Press down arrow
       Display reads [MEASURE 2 (Rx)] (SETPOINT 3] again (has scrolled back up to the top of this menu) use right arrow and set to **[SETPOINT 4]** …..follow steps 2d to 1h. Note, Setpoint 4 can be used to trigger an alarm (not supplied) if set point value exceeded. For this, set Setpoint 4 to 350mV and Operation type to REDUCING. Use terminals on board J6, 1 & 2.
    j. Once all parameters are set, press up arrow to the top of the menu, and press Star/Stop to take you to readings and ensure newly set parameters are saved.

5) REDOX Calibration
    a. Press Start / Stop
       Display reads [CONFIGURATION, **MEASURE 1 (pH)**]
    b. Press right arrow to show [CONFIGURATION, **MEASURE 2 (Rx)**]
    c. Press down arrow twice
       Display reads [MEASURE 2 (Rx), SETPOINT 3]
    d. Press right arrow to get to [CALIBRATION]
    e. Press down arrow to enter Calibration mode

Flow diagram Rx CALIBRATION



###: value measured by the instrument.

readings cannot be made the pH probe could be at fault. If this occurs try replacing the pH probe.

The Rx Calibration is a two stage process.

CALIB. SET1 = 0
CALIB. SET2 = Known mV Value

CALIB. SET1. Connect the blanking plug supplied and allow the reading to stabilise. When the reading has stabilised proceed to the next step by pressing the downwards arrow.

CALIB. SET2. Connect the Rx probe (inserted in the known mV Buffer Solution) and allow the reading to stabilise. When the reading has stabilised proceed to the next step by pressing the downwards arrow.

Calibration is now complete. If calibration or correct readings cannot be made the Rx probe could be at fault. If this occurs try replacing the Rx probe.

6) REDOX Temperature setting
   a. Press Start / Stop
      Display reads [CONFIGURATION, **MEASURE 1 (pH)**]
   b. Press right arrow to show [CONFIGURATION, **MEASURE 2 (Rx)**]
   c. Press down arrow twice
      Display reads [MEASURE 2 (Rx), SETPOINT 3]
   d. Press right arrow to get to [TEMPERATURE]
   e. Press down arrow to enter Temperature – use this feature to set the temperature of the system water when no temperature probe is being used.