Instructions for use of TDS (Total Dissolved Solids) meter to ascertain cleanliness of system water and correct chemical treatment level.

NOTE: TDS is usually expressed as parts per million (p.p.m.), or as mg/litre.

Before first use of the Eco Testr, soak sensor for 2 minutes in alcohol to remove oils. Rinse in clean water.

TESTING

1. Take a sample of at least 100ml of the water to be tested in a suitable clean beaker / vessel, to a depth of approx. 5cm.

2. Remove protective cap from the TDS meter.

3. Turn the TDS meter on by depressing the ON/ OFF button located on the side of the meter.

4. Immerse the TDS meter into the sample of water, without touching the bottom of the sample container.

5. Stir gently and wait for the display reading to stabilise. The TDS meter automatically compensates for temperature variations, and variations on the meter display can be due to the temperature sensor adjusting to the sample temperature.

6. Read the figure from the display, which is in parts per million of total dissolved solids (= mg/ litre).

To hold the display for easier reading, press 'HOLD' key. Press 'HOLD' key again to release.

7. After taking the reading, remove the meter from the sample, and flush with clean water before storing.

To check correct treatment level of flushing chemical such as Hyper-Flush and Hyper-Flush Concentrate

1. Check TDS reading of a sample of system water, as above.
2. Unless the system water volume is already known, 'guesstimate' the volume of water in the system working on the guideline that a three bedroom semi detached house (say 10 radiators) will typically contain around 100 litres of water, calculating on a pro rata basis.
If the system has a thermal store, then the volume could be up to three times greater – check manufacturers' literature, or thermal store ID label, for capacity, and add this in to the calculation.

Commercial systems

If the water volume is unknown, an approximation, in litres, may be calculated using a rule of thumb guide, by multiplying the boiler output (in kW) by a factor of 13.5.

(a) USE WITH HYPER-FLUSH

3. Hyper-Flush should be added at a treatment rate of 1% by volume, so add 1 litre per 100 litres of system volume.
4. A 1% solution of Hyper-Flush will increase the TDS reading by 900 ppm over the reading for untreated system water.
5. After addition of Hyper-Flush to the system, take a further TDS reading , and continue adding until the TDS reading = pre-treated system water reading + 900 ppm.

(b) USE WITH HYPER-FLUSH CONCENTRATE

Hyper-Flush Concentrate should be added at a treatment rate of 0.5% by volume, so add 500ml per 100 litres of system volume.
4. A 0.5% solution of Hyper Flush will increase the TDS reading by 1600 ppm over the reading for untreated system water.
5. After addition of Hyper Flush to the system, take a further TDS reading , and continue adding until the TDS reading = pre-treated system water reading + 1600 ppm.

To check correct treatment level of corrosion inhibitor (Systemsafe-DM or Systemsafe_DM Concentrate) after flushing

(a) USE WITH SYSTEMSAFE-DM

Once system has been flushed until system water has TDS reading close to that of mains water (make a note of this reading), add Systemsafe DM corrosion inhibitor to the system until the TDS reading of the treated system water = mains water + 875 ppm.

(b) USE WITH SYSTEMSAFE-DM CONCENTRATE

Once system has been flushed until system water has TDS reading close to that of mains water (make a note of this reading), add Systemsafe DM Concentate inhibitor to the system until the TDS reading of the treated system water = mains water + 600 ppm.

Systemsafe-DM concentration may also be checked using a Systemsafe-DM drop test kit. The same test kit may be used with both versions of Systemsafe-DM.

Recalibrating TDS meter

The Eco Testr meter is factory calibrated. However, to ensure accuracy, regular calibration is recommended.
1. Rinse sensor in clean water and shake dry.
2. Dip sensor in 1413uS /990 ppm standard solution.
3. Switch meter on and wait for display to stabilise.
4. Press 'cal' to enter the calibration sequence. Display flashes 'CAL' momentarily and then shows flashing default reading.
5. Press 'hold/ent' button to scroll to the standard solution value.
6. Release 'hold/ent' button and wait for auto confirmation.

Changing batteries:

1. Lift up the front battery cover to release the front catch. Push up and hold in that position. Lift the pocket clip to release the back catch and slide upwards to remove the battery cover. (Figure 1).
2. Remove old batteries; replace with fresh ones. Note polarity as shown in the battery compartment.

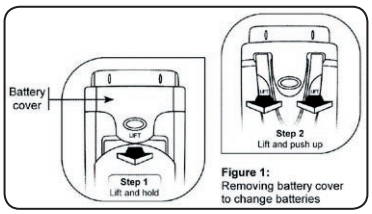

Figure 1: Removing battery cover to change batteries

Self diagnostic messages

bAt: Weak batteries – replace with four new batteries.
Er: Faulty temperature sensor.
Or: Over range signal, or electrode is not in contact with solution.