

**Monitor description:**

The PBS-1 Ammonia monitor is an in-situ system where the Ammonia measurement takes place in the buoy directly in the final effluent, the reagent, standard, and all measuring components are housed within a stainless steel buoy. The system comprises of a settlement chamber, an Ion Selective Electrode (ISE), pH electrode, measurement cell, air pump unit, and a microprocessor. To fill the settlement chamber a de-aeration valve is opened which allows the pressure of the final effluent to fill the settlement chamber, the instrument then waits for a period of time for the solids to settle to the bottom of the chamber. The de-aeration valve then reopens to allow the settled sample to fill the measurement cell. A reagent (alkaline solution) is then added to the liquid in the measurement cell to bring the pH to required value, once the pH electrode indicates that this value has been reached the Ammonium ions have been converted to Ammonia ions, and the concentration of these ions is measured by the ISE, and a result is generated and displayed on the screen. After each analysis the measured sample is purged out of the measuring and settlement cells by opening the aeration valve and a new analysis cycle is initiated. The frequency of analysis is user determinable and is normally set to every 15 to 30 minutes.



PBS-1 Buoy



Controller

### Keypad description



Operation: use this key to return to operation mode, the display will show the current measured value and last 6 hours trend



Service: This allows access to the maintenance menu



Programming: This allows you to access the settings menu after entering the passcode 7860



Enter: Press to confirm a selected point in the menu, or to confirm any other input



CLR: press this key view active warnings and errors.

Left/right/up/down and numeric: Allow you to scroll through the menus and enter values to change the instruments configuration.

### Analyser Maintenance:

The analyser will be covered by the Servitech maintenance framework, and each one will be visited on a fortnightly or monthly basis, if there are problems between these visits then a call out visit can be requested on our normal number (24 hours a day) 01234 744700. The nature of the instrument means that there is very little manual intervention that can be done by site personnel, however there are some questions that we may ask in order to ascertain the nature of the problem before attending a call out, these are as follows: -

1. Are there any error codes on the display, if so contact Servitech? Possible errors are: -
  - a. ANALY. DISCONNECTED –self evident
  - b. LEAKAGE ERROR – liquid has entered the buoy so attention req'd
  - c. STANDBY – the buoy is out of the water or blocked
  - d. PURGE ERROR – the buoy cannot purge so is either leaking or blocked
  - e. MEAS.CELL FILL ERROR – the buoy cannot fill the measuring cell
  - f. REAGENT ERROR – pH target not being reached, either faulty valve or no reagents
  - g. CALIBRATION WARNING – The calibration differs from the previous calibration by a large margin. To check the results of the last calibration press the programming button and enter the code 7860, move the flashing cursor to data press enter then go to all data and press enter and scroll to display the calibration constants the bottom figures should be between -45 and -65
2. Is the PBS-1 immersed in the sample? – If the site has variable levels of sample and this has not been allowed for during the survey, or if the way the site operates has changed since the survey, then the buoy may be exposed from the sample at certain times during the day. If it can ever be exposed we need to know so we can reassess the installation - Call Servitech

This document is for reference purposes only and is to be used in conjunction with the training session and appropriate site and activity risk assessment and method statements.