

### Introduction

The validation unit comprises a 4623-500 conductivity transmitter and a 2278-315 conductivity cell housed in a 2998 flow chamber.

The unit has been factory-tested to ensure that it is working within specification and is ready for immediate use.

**Note.** Ensure that the unit is returned to ABB Kent-Taylor at appropriate intervals for re-validation (refer to your local schedules).

**Important Notes.** To ensure that the validator and on-line measurements are compatible note the following:

- The validator sample must be taken and measured as close as possible to the on-line measurement point.
- The temperature of both samples must be as close as possible.
- The on-line unit must be set up using same temperature compensation method as the validator. The validator is configured at the factory with **no temperature compensation** to conform to USP 23 requirements.

### Operating Procedure

**Note.** The validation unit should be ready for use at all times. However, it is recommended that the maintenance procedure overpage is followed before continuing.

**Caution.** Before operating the validation unit ensure that it is safely located on a flat surface and that the power cable is kept away from walkways etc.

- 1) Connect the power cable to a suitable supply (115/230 V a.c., single phase) and switch on.


**Note.** If the voltage supply is different from that specified for this unit, use the procedure in the Operating Instructions (IM/4600-CON) supplied for 4600 conductivity transmitters for changing the voltage.

- 2) Raise the flow chamber to the vertical position and lock the support arm.
- 3) Connect a suitable length of sample tube to the sample outlet at the top right of the flow chamber and place the other end of the tube in a waste water drain.


continued overleaf...

**...Operating Procedure continued**

- 4) Connect a short length of sample delivery tube between the sample inlet at the bottom of the flow chamber and the grab sample outlet.

 **Warning.** Ensure that sample points on system lines are conditioned to a safe pressure and temperature before attempting to open a grab sample valve.

- 5) Open the grab sample valve and set the flow rate to approximately to 0.5 l/min.


 **Note.** Flow rates are not critical but should not exceed 0.6 l/min.

- 6) Wait for the sample temperature to stabilise on the display to the same value as the on-line device.
- 7) Compare the reading shown on the system display with that on the validation unit.


**Shutdown and Storage**

After use:

- 1) Switch off the power supply and disconnect from the mains.
- 2) Close the grab sample valve.
- 3) Disconnect the tube from the grab sample outlet and let the validation unit empty into the waste water drain.

 **Note.** Does the validation unit require maintenance? If so, follow the instructions opposite before continuing this procedure.


- 4) After the residual water has drained away disconnect the drain tube and the sample inlet tube by releasing the quick fit connectors.

 **Note.** Valves fitted in the connectors on the flow chamber prevent any residual sample from spilling into the case during storage/transit.

- 5) Unlock the flow chamber support arm and lay the flow chamber flat before stowing the mains cable and connecting tubes.

**Maintenance**

This system is virtually maintenance free, but the Company recommends that the user periodically cleans the flow chamber and cell as follows:

 **Warning.** Hazardous voltages. Ensure that the mains supply is disconnected before attempting this procedure.

- 1) Raise the flow chamber to the vertical position and lock into place.
- 2) Attach a suitable length of tube to the bottom quick fit connector and the free end to a drain.
- 3) Release the tri-clamp and withdraw the conductivity cell.
- 4) Flush out the chamber using demineralized water and a soft brush; dry it with a soft, lint-free cloth.
- 5) Rinse the conductivity cell with demineralized water; dry it with a soft, lint-free cloth.
- 6) Insert the conductivity cell into the chamber; fit the tri-clamp and tighten to achieve a watertight seal.
- 7) Remove the drain tube.

The unit may now be put into service or packed away.

**Performance**

**Instrument**

Scale: ..... 0 to 1 up to 0 to 10 µS/cm

Display accuracy: ..... ±1% full scale, ±1 digit

**Cell**

Cell constant accuracy: ..... < ±1%



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