AWE

Model ACS1

Conductivity Simulator

The ACS1 conductivity simulator provides a precise method of checking the calibration of conductivity meters of the two electrode measuring principal of operation. The ACS1 features eleven conductivity values ranging from 1μS to 100,000 μS.

The conductivity simulator is first connected in place of the measuring cell at the instrument terminals to check the serviceability of the measuring instrument. It can also be substituted for the service cell and maybe also be used to check the serviceability of extension cables and of wiring within the meter itself.

1. Operation Disconnect the cell from the instrument under test. If automatic temperature compensation is fitted a fixed resistor of the automatic temperature compensator value at 25°C should be fitted in place of the automatic temperature compensator. Some AWE Instruments use a 10 K Ω sensor and others use a Pt100 please check with the sales off or service dept if in doubt.

2. With the cell disconnected check the reading is zero. On digital meters this maybe set precisely using the zero control.

3. Connect the ACS1 conductivity simulator and first turn the function switch to 1μS.

4. Step the function switch round as the reading increases the conductivity measuring instrument should correspond broadly to the settings disregard slight deficiencies of correspondence.

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. Chose a setting which corresponds to either 50% or 100% of the measuring range and adjust the calibration control on the instrument under test to that value.

6. Check that other setting correspond to the conductivity simulator.

Note 1. The above applies to cells with a constant of K = 1.0 for other cell constants multiply the simulator setting by the cell constant I.E. conductivity simulator setting 5000μS x K = 10.0 gives a conductivity reading of 50,000 μ S. or 1000μS x K = 0.1 gives a conductivity reading of 100 μ S.

Note 2 Cell types IN2, D110 & FL2 have constants which are very accurate usually ± 1 or 2% and can be calibrated as above. However other cells may vary due to the manufacturing process are not so accurately manufactured and should be calibrated against conductivity standard solution within the conductivity measuring range in use.

Low cost 12 mm dia cells supplied with portable instruments due to the small electrode size can vary considerably but can usually be calibrated against standard solutions.

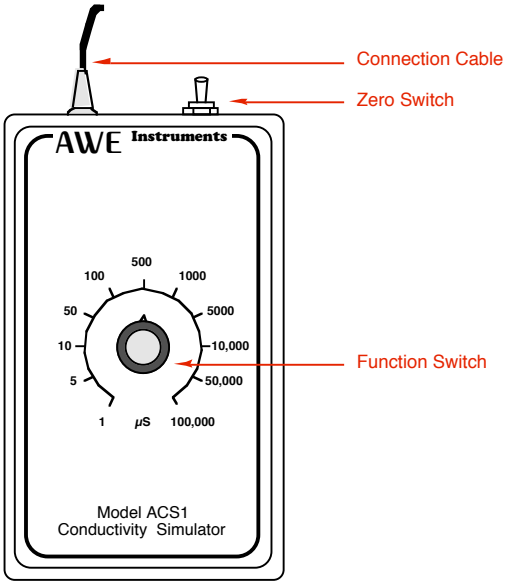
Electrodeless can be checked by looping a wire through the centre hole in the cell however the readings obtained will not be accurate and standard solutions should be used with these cells

Specifications

ACS1 Conductivity Simulator

Conductivity settings K = 1.0	0, 1, 5, 10. 50. 100. 500. 1,000. 5,000. 10,000, 50,000 & 100,000 μS
Accuracy	± 1% Components used 1% tolerance.
Dimensions.	100 mm. x 50 mm. x 25mm
Note 1	When calibrating systems using cells with constants other than K = 1.0 the true measuring range should be multiplied by the cell constant. I.E. for constant K = 10.0 multiply by 10 and constant K = 0.1 divide by 10.
Note 2	Electrodeless cells maybe tested for functionality but the readings may not correspond as the ranging factor may vary.

Controls



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