

Linearity pack

Salinometer calibration for measurement of oceanic samples is traditionally carried out using IAPSO Standard Seawater (salinity = 35). For measurement of samples of higher and lower salinity, Ocean Scientific International produce standards at salinities of 10, 30 and 38. Salinometer linearity checks provide a useful diagnostic tool in assessing the function of a salinometer and are routinely carried out at the Ocean Scientific Service Centre. Offset values can be used to improve the accuracy of measurements made away from 35 salinity. A large offset away from the 35 salinity point can be indicative of electronics misalignment, cell ageing or temperature bath malfunction.

A typical procedure for linearity correction would be:

- 1) Standardise the salinometer with P-series Normal Standard Seawater (Salinity 35)
- 2) Measure the salinities for 38H-series, 30L-series and 10L-series Standard Seawaters
- 3) Calculate the difference between the measured value and the label value for each of these standards
i.e. measured value-label value = salinometer offset
- 4) Plot a graph of offset at each salinity (a linearity curve).
- 5) Use the plotted offset data to correct salinity measurements away from salinity 35

NOTE:

Guildline Autosal accuracy specified as better than +/- 0.002 in salinity over the working range (2-42)

Guildline Portasal accuracy specified as better than +/- 0.003 in salinity over the working range (2-42)

If a linearity calibration curve gives an offset greater than 0.002 for an Autosal (0.003 for a Portasal) then the Salinometer is out of spec and should be returned for a service and electrical alignment.