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CTD S/N 09P81467-1213

TRANSMISSOMETER CALIBRATIONS   S/N: CST-1681DR   Date: 17-Nov-14

z = 0.250 meters (transmissometer path length)

A0 = 4.817 (air calibration voltage from instrument manufacturer)
Y0 = 0.003 (blocked path voltage from instrument manufacturer)
W0 = 4.702 (voltage output in pure water from instrument manufacturer)

A1 = 4.816 (current [most recent] air voltage)
Y1 = 0.002 (current [most recent] blocked path voltage)

Tw = 100% (% transmission in pure water, **relative to water** – see application note 7)

M = $(Tw / [W0 – Y0]) * (A0 - Y0) / (A1 - Y1)$
= (100 / [4.702 - 0.003]) * (4.817 - 0.003) / (4.816 - 0.002)
M = 21.281

B = $-M * Y1$
B = -0.043

M and B are based on the factory calibrations in water and in air performed by the instrument manufacturer, as well as calibrations performed in air at Sea-Bird Electronics. The calibrations at Sea-Bird (A1 and Y1) are done to account for any drift in the instrument response from when it was calibrated at Wet Labs to when it was integrated with a CTD at Sea-Bird.

Enter these values of z, M, and B in the transmissometer calibration section of the configuration (.con) file using the Configure menu in SEASAVE or SBE Data Processing (in the SEASOFT-Win32 suite of programs) or using SEACON (in the SEASOFT-DOS suite of programs).

Note on Transmissometer Measurements Relative to Air:

Many optical oceanographers prefer reporting transmissometer measurements relative to water, because they are not based on (the currently accepted) values of Tw, which are subject to interpretation and may change in the future. Consequently, as of April 2004, Sea-Bird is calculating M and B relative to water, and indicating those values on the Calibration Sheet and in the configuration (.con) file. However, if desired, you can recalculate M and B relative to air, using the following value of Tw with the equations above, and input those values in the .con file.

Tw   =   90.2%   (% transmission in pure water for this transmissometer, relative to air)

Transmissometer wave length and color   =   660 nm, red

Refer to the instrument manufacturer's users manual and Sea-Bird Electronics Application Note 7 for further information