

Electronic Air Pressure Methodology

(Last rev. 04/10/2024)

Barro Colorado Island – BCI (Figure 1) atmospheric air pressure is measured electronically at the Laboratory Clearing ('El Claro') inside the fiberglass equipment box (see Figures 2) located in the BCI Clearing site. This is an open area surrounded by trees of up to 20m in height.

Beginning in 1996, different sensors have been used. From 1996 to 2010 the CS106 sensor (also known as a Vaisala PTB101B) Barometric Pressure Sensor was used. Since 2011 the CS106 sensor (also known as a Vaisala PTB110) has been in use (see Figure 3 & 4).

Air pressure is sampled every 10 seconds. The average, minimum and maximum values are recorded at the end of every 15 minute interval.

Records are provided with two Quality Control flags. Flag one indicates the fitness-for-use of each record. Possible values are: good, bad, doubtful, missing. Records are marked as bad if they fail one or more QC tests. Likewise, records are marked as doubtful if they are potentially bad, but without sufficiently strong evidence to be marked as bad. The second QC variable provides that reason for marking a variable as bad or doubtful. Potential values are: range, step, persistence, drift. At this time only range tests have been applied.

Figure 1



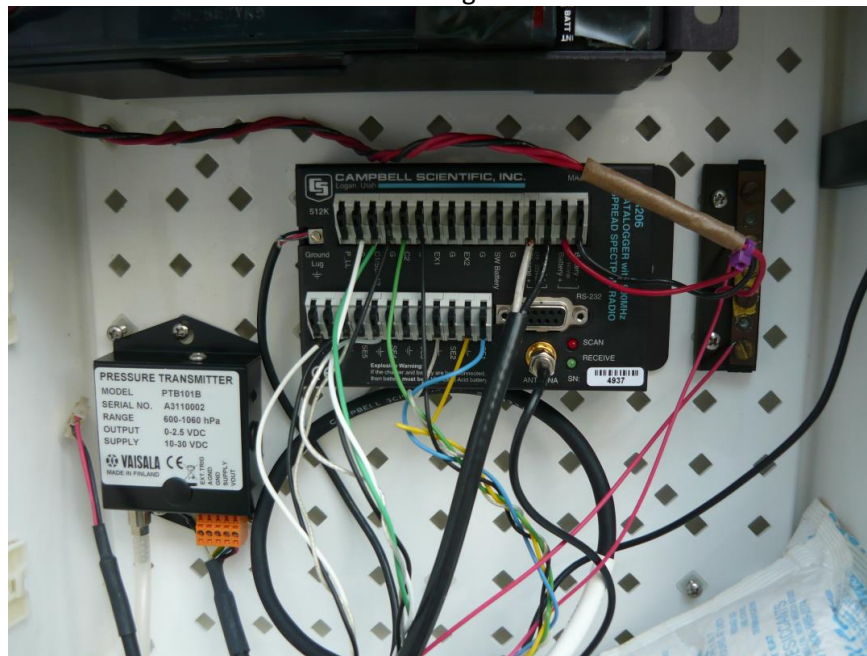
Location of Laboratory clearing

Figure 2



Laboratory Clearing

Figure 3



Pressure sensor inside of equipment shelter. Note plastic tube connecting sensor to the outside of the shelter.

Figure 4



Vaisala PTB101B Barometric Pressure Sensor



Vaisala PTB110 Barometric Pressure Sensor