Power Systems

Overview

Regardless of the type of datalogger and sensor, the one constant they all need is power.

Batteries

Because of the relative isolation of seismic stations the most common power source is a battery. Batteries come in two main types: primary and secondary. Secondary batteries are rechargable and primary batteries are used once then discarded.

Most experiments that utilize Q330's and RT130's will use deep cycle lead-acid batteries. The size and capacity of the lead-acid battery will vary with datalogger type, sensor type, telemetry, solar panel size, and geographic location.

Most experiments that utilize Texans (RT125A's) use two D-cell batteries per station. In this configuration the Texan can run for approximately 120 hours at 100 samples per second.

At least 3 months before a long-term experiment is scheduled to go in the field, you should consult with PASSCAL personnel to discuss the power requirements for your experiment.
The power box is a plastic enclosure which houses the solar charge controller. This box is what routes power from the solar panels into the battery and power from the battery to the datalogger and sensor.

Solar Equipment

To keep a long term experiment powered, some solar equipment will be required. The solar equipment refers to the combination of solar panel and a solar panel mount. Having the proper sized solar panel and proper placement is one of the most important aspects of a seismic station installation because without power you have nothing.

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