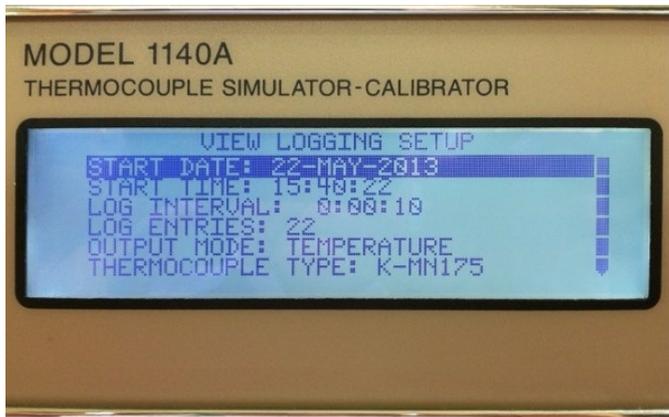


DATA LOGGING WITH THE ECTRON MODEL 1140A

A feature of the Model 1140A that can be very useful is the data logging function available on all Model 1140As. Up to 10,000 data points can be captured in time intervals from 1 second (2 hours and 46 minutes of data) to 1 day (27 years of data). The data can be viewed on the front screen, and it can be downloaded to a computer as a spreadsheet file where it can be further refined.

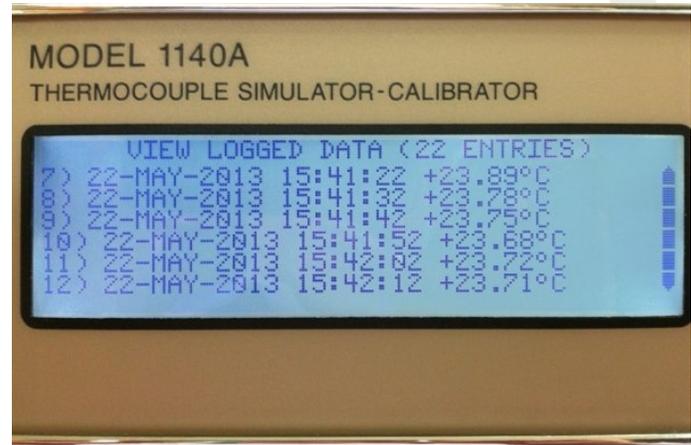
Set the operation mode to meter, set the measurement parameters (voltage, temperature, thermocouple type, etc.), and the measurement interval, and away you go.



As part of the testing procedure of all Model 1140A battery packs, Ectron uses this capability to ensure that all batteries meet our specs and that they have the proper life expectancy.

With the battery fully charged, a type K thermocouple is connected between the unit's input and the battery pack. Data logging is started with an interval of one minute, and the unit is unplugged from ac power. When the unit "dies," it is reconnected to ac power and the number of minutes of data logging is recorded. Data logging is again started to monitor the battery temperature during the charge cycle. Once the battery pack is fully charged, data logging is stopped and the highest temperature reached during charging is recorded. This cycle is repeated several times to ensure that the battery has sufficient power and that it recharges in the specified time without exceeding our temperature specification.

This test is run again on units that have the battery pack installed as an option prior to shipment to the customer.



Another application for both the data logging feature and the autozero feature

When an autozero is entered from the Model 1140A's menu, whatever the instrument was reading before is immediately set to zero. From then on the readout will indicate the difference in reading of the actual temperature and zero. For example, if monitoring a temperature chamber whose temperature was 1600°C, when the user commands an autozero the instrument reads zero and thereafter follows the temperature variation of the chamber about zero with a high degree of accuracy and resolution. Immediately the Model 1140A reads 0.00000°C and any variation in chamber temperature will show as 0.12345°C or -2.45678°C for actual temperatures of 1600.12345°C and 1597.54322°C, respectively. In other words, the resolution of the reading becomes either 9 or 8 digits!

The readout signals are coupled to the user's interface for data logging or computation as desired.

Note: Until an autozero is canceled both the display and the interface data will reflect the change of the autozero.



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