ZUPS Support

Local application

Fri, Jan 10, 2003

This note fleshes out more operational details of the `ZUPS` local application.

For each power supply in sequence, determine what serial transmission should be used.

Watching for settings requires monitoring the current setting values for changes. Use `ChanFlt` to obtain this information about the current supply. If a change is detected, prepare the appropriately BCD-formatted value and send out the proper command to accomplish the setting.

Or, perhaps the monitoring of setting changes only results in bit(s) being set in the `marks` field and the new value being stored in the appropriate field. Then the `NextSerial` routine decides what is to be done in terms of sending out a message. In the course of actually sending out the next message, prepare the BCD setting value, which is also logged as well as used to generate the required ascii string. Clear the `marks` field bit. Set a flag to insure that on the next cycle, the `STT` query command is sent.

When any query command is to be sent, a pending status must be set and a timeout imposed on the reply. Two cycles is probably enough for any reply. If the timeout occurs, perform a retry of the query command. If the second one times out also, then the supply should be considered in "down" status, and its analog data cleared, including the peak voltage and current values. Since tha latter are zero, the next time a determination is made of what to do, a `MDL` or `REV` command is sent. If no reply is received in one cycle, this just maintains that supply's down status. The idea here is to keep from holding up communications with supplies that are not in down status.

In case there is no `marks` bit set, so that nothing special needs to be done, count down the wait counters that are used for uncommon queries. If one reaches zero, send out that command.

For any supply that is down, the `MDL` or `REV` query is to be sent, and the timeout set to one cycle. If the supply is not down, but the peak voltage and current are sero, we still must send a `MDL` or `REV` query. (Perhaps the reply was not interpreted correctly.) Only when a supply is not down, and we have valid peak values, do we consider further communications with that supply. Part of the reason for this is that we need to know the specific supply model in order to format a setting value.