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A-9000 OEM Control Circuit Board

Specifications:

- 1. Micro Controller:** The micro controller is an ATMEL 8535 which provides:
 - a. 8 channels of digital I/O
 - b. 8 channels of 10 bit analog I/O – can be configured for digital I/O
 - c. 1 true RS232 C serial port and 1 TTL level serial port
- 2. Bowman I/O:** The Bowman board contains the micro controller and signal conditioning for digital and analog functions:
 - a. Two instrumentation Amplifiers are available to read resistive bridge networks or other voltage sources. The gain of the amplifiers is set with a single resistor. The amplifiers are high performance low drift low offset devices. A precision 10 volt dc reference is available for sensor or bridge excitation.
 - b. A thermistor amplifier is available for linearizing and scaling temperature function. This amplifier can be used for general purpose interfacing by removing or changing resistor values.
 - c. A general purpose analog buffered input amplifier for accepting 0 to 5 volt dc signals is available. The input is polarity and amplitude protected.
 - d. A digital input signal is available. The input is (Active Low) pulled to +5 with 10 k resistance. The levels can be TTL, CMOS or a dry relay closure to ground. This function can be made to be active high or active low.
 - e. A beeper function is available.
 - f. A Form C relay (SPDT) is available. It is rated at .5 amps DC.
 - g. Four Digital inputs are available for either a keypad or for general digital input use. The inputs are pulled to ground with 10k resistors. They could be made to be active high or active low inputs.
 - h. Two 10 bit analog outputs are available. These are PWM outputs which are filtered and buffered with an operational amplifier that can have gain and have transistor outputs. These analog amplifiers can be configured for voltage or current outputs. Each output is independently programmable.
 - i. The RS232 serial port is used for general communication and for downloading run time code.

- j.** A second serial port is available to communicate to an intelligent serial display. This display can be a 2 line by 16 character or 4 lines by 20 character device. The displays available have programmable contrast and backlighting.
- k.** The Bowman controller requires + 15 volts @ 300 mA to operate with a back lighted display. The input voltage can be changed with an on board regulator change.
- l.** All above function are available with on board connectors.