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PCBA 5010-4 Technical Service Bulletin

January 23 2014

Dear Customer,

1) A problem with the PCBA 5010-4 battery analyzer channel relays has recently been discovered whereby the relays installed over the past five years have been found lacking in DC current carrying capacity and could suffer from conduction / connection problems due to elevated operating temperature for currents exceeding 8 Amps.

2) A second problem, related to relay conduction, affects the accuracy of the battery voltage reading with errors ranging from 0 to 50mV or more as a function of current that is supposed to be compensated for by calibration setting "Voltmeter Current Gain", but this value has been found more variable than otherwise expected due to poor / variable conduction of relays. So problem tends to cause voltmeter readings higher when charging and lower when discharging than otherwise should be which is lucky from a battery damage and safety perspective, such that errors are on the side of less stress in either direction in terms of actual battery voltage, and thus causes capacity readings to also be lower than otherwise would be.

3) Two unrelated improvements to channel firmware. **A)** Disconnection of channel relays for pause periods greater than 12 seconds to lessen previously overlooked load current on battery. Disconnection of relay increases load resistance per channel from 1k7 to 27k ohm. **B)** A software glitch was corrected with thermistor temperature sensor that at times could cause channel to enter power failure mode for no reason other than connection of battery cable or by noise when running service using cables unequipped with temperature thermistor.

So for these reasons and other improvements not listed; customers are encouraged to return their analyzers, either version 1 or version 2 hardware, to me in Canada at their convenience for replacement of relays and other upgrades, firmware updates and recalibration at no charge. Customers need only pay the costs of shipping to and from Canada.

I apologize for these problems and any inconvenience they cause. Please contact me prior to shipping for warranty return authorization and instructions.

Sincerely,

Randy Smith

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