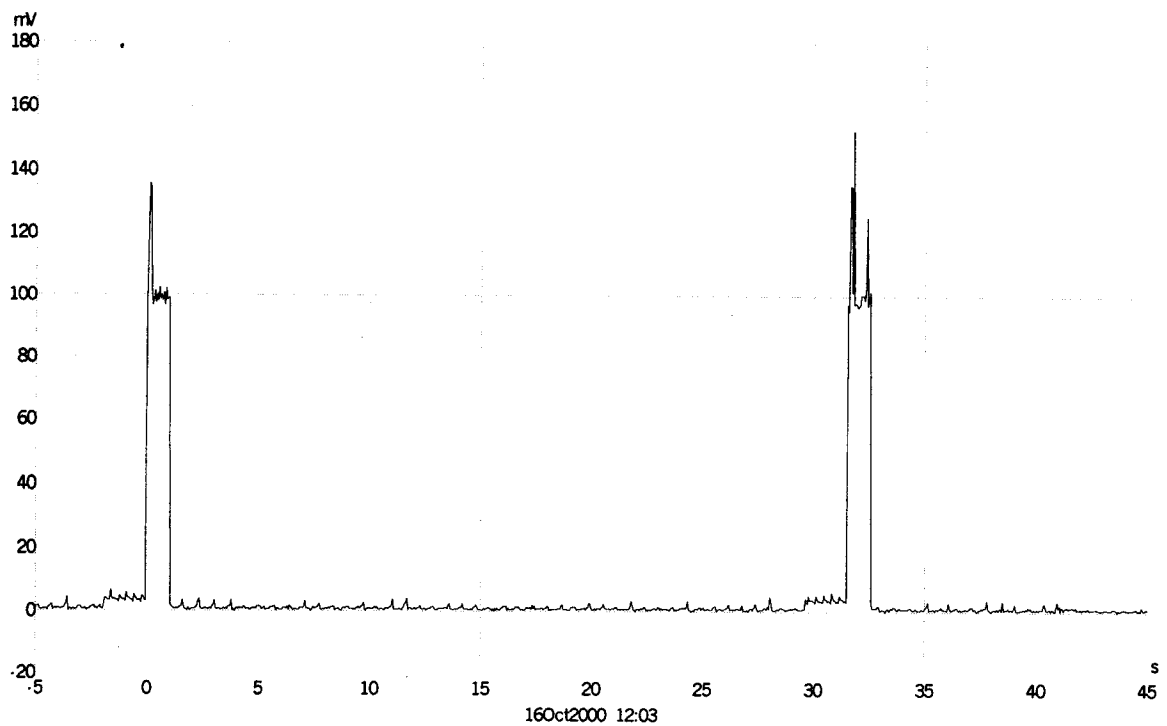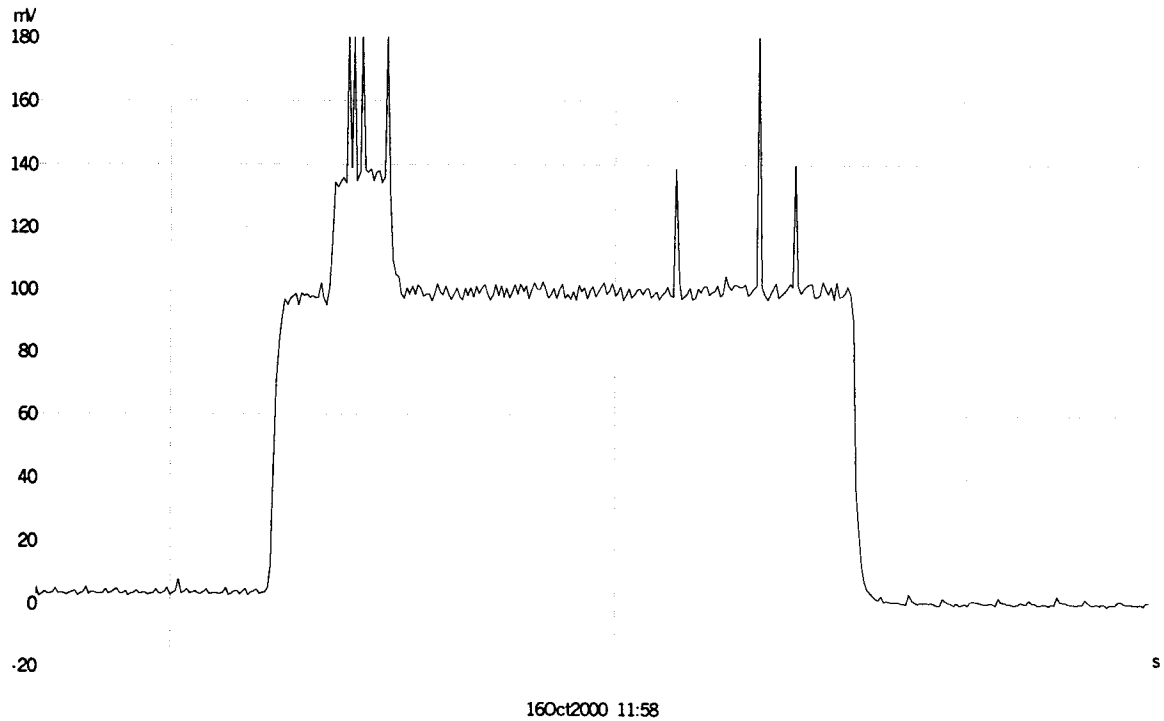# Quick-Ox : Evaluation.

Carried out by S Watmough : 16 Oct 00.

10ohm series resistor installed in +ve supply from battery.
Picoscope connected across 10ohm resistor.

160ct2000 11:58

160ct2000 12:03

Power consumption calculations.

One pulse occurring every 32.5 secs approx.
Each pulse approx 100mV amplitude & 1.05 secs in duration.

Therefore, peak current = 100mV/10ohm = 10mA.

Average current over 32.5 sec space = 10mA / 32.5 = 0.3077mA average continuous draw.

No of hours in 3 yr period = 3 x 365 x 24 = 26280 hrs.

Therefore, battery capacity req'd = 0.3077mA x 26280 = 8086 mAH = 8.086AH. (?!!).

This is estimated battery capacity req'd for continuous operation in non-alarm conditions.

Misc.

Alarm sounds at processor wake up when O2 level found below alarm threshold.
LED flashes and piezo sounds on/off, continuing until the alarm condition has passed.
Good audio level from piezo.

Prototype felt not to be very aesthetic and on large side.

Ideally require analyser to be powered by single battery source.

LCD battery & holder removed – unit now powered by single 3V lithium cell.
LCD shows Error when powered up – requires the original battery to be reconnected then, when reading, disconnected. LCD reading increased from 21% to 26.5% for no apparent reason – possibly due to common earth. This is not acceptable.
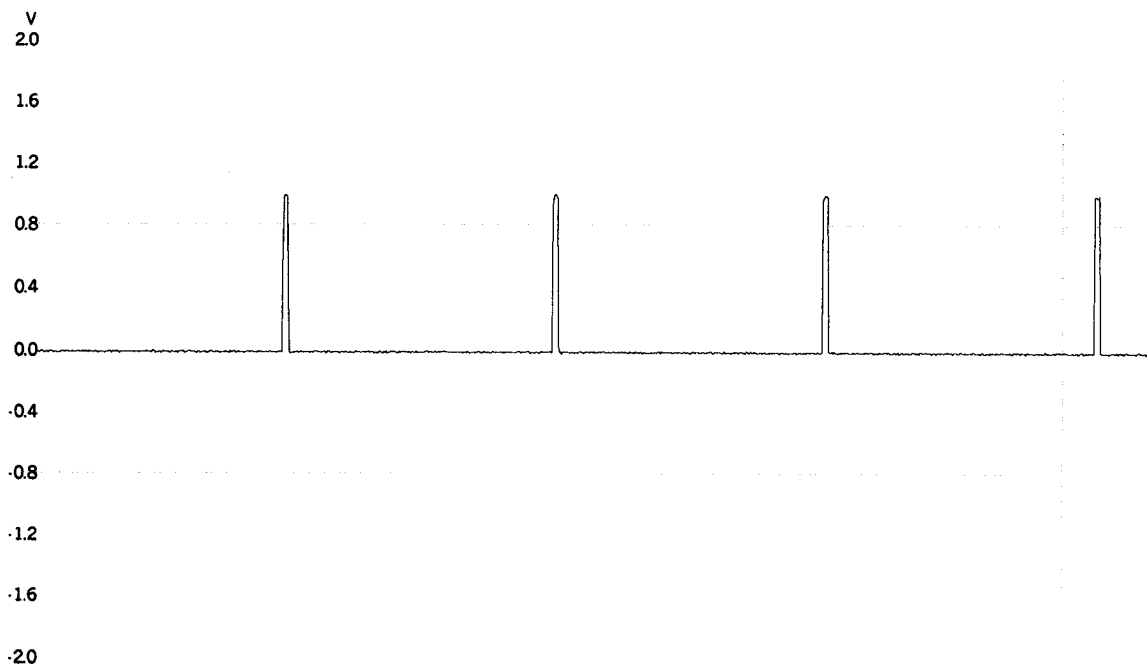
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Spikes present, between LCD batt –ve & circuit batt –ve due to sampling of LCD.

Conclusion.

Inconclusive.

Cannot run both LCD & alarm circuit of the same power supply.

Could remove LCD battery and site elsewhere.

Failure of alarm circuit battery will leave unit apparently working correctly to the user, when the alarm side is non functional.

Require shielded cable from DPM connection of alarm PCB to LCD Hi & Lo.

Spikes appear to originate from LCD module – do all LCD modules create spikes in this way? Can the module be changed for an alternative ?