Close Loop Controlled Current Nerve Locator

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Abstract : Successful regional anesthesia depends upon precise location of the peripheral nerve or nerve plexus. Locating peripheral nerves is preferred to be done using nerve stimulation. In order to generate a nerve impulse by electrical means, a minimum threshold stimulus of current "rheobase" must be applied to the nerve. The technique depends on stimulating muscular twitching at a close distance to the nerve without actually touching it. Success rate of this operation depends on the accuracy of current intensity pulses used for stimulation. In this paper, we will discuss a circuit and algorithm for closed loop control for the current, theoretical analysis and test results and compare them with previous techniques.

Keywords : Close Loop Control (CLC), constant current, nerve locator, rheobase

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