

Internal Reset Error Message and Post Irradiation Leakage, Model 35040

Information in this article applies to

Model 35040 with system leakage current less than 0.050 pA while the cable and ion chamber are attached. Refer to the stabilization time required as described in section 1.6 of the model 35040 manual before adjusting the start and stop thresholds.

Summary

At the end of an exposure, the instrument will display "*Internal Reset Error*." Most often, adjusting the start and stop thresholds can eliminate this behavior.

Introduction

Some ion chambers may cause *Internal Reset Error* to be displayed when used with the Model 35040 Advanced Therapy Dosimeter due to post irradiation leakage. This problem is seen most frequently with older ion chambers. After the instrument has detected the end of an exposure, a short time period exists when there should be negligible charge accumulated by the electrometer. If the charge exceeds the amount permitted, the instrument displays the *Internal Reset Error* message.

Procedure

When used in an electron beam, some ion chambers may cause the instrument to false trigger a new start of exposure. The output of these chambers rapidly falls at the end of exposure and then slowly decays in the low pA range for a number of seconds.

To get a reproducible end of exposure, disable the ALC (Automatic Leakage Compensation) function, or on older units, prior to firmware 27JAN00, set the thresholds to zero.

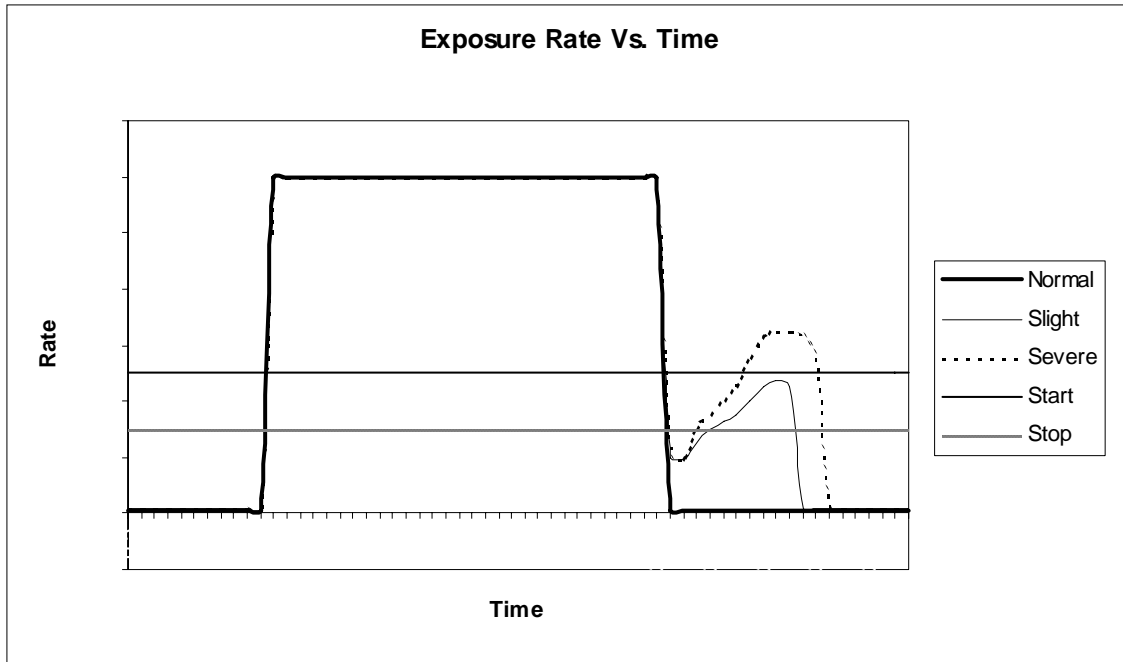
Make an exposure and observe the current on the threshold screen at the end of the exposure. Note the current approximately 5 seconds after the end of the exposure. Set the start threshold to the magnitude of the noted plus 0.4 pA. Set the stop threshold to the magnitude of the noted current minus 0.1 pA. This produces a 0.5 pA hysteresis band. For example, if the observed current is 1.1 pA, set the start threshold to 1.5 pA and the stop threshold to 1.0 pA. If the instrument still false triggers or reset errors occur, widen the hysteresis band by raising the start threshold.

Applications Note

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The graph below shows some possible examples of input signals the Model 35040. Start and Stop threshold set points are viewed as lines above zero. The heavy solid line is an example of a normal input signal. The other two lines show ion chamber signals with slight and severe post irradiation leakage.



Technical assistance

For technical assistance, please contact Fluke Biomedical, 6045 Cochran Road, Cleveland OH 44139, USA, tel 440.248.9300, fax 440.349.2307, email rmsinfo@flukebiomedical.com, or internet www.flukebiomedical.com/rms.