Proceedings of The Institute of Acoustics

DATA ACQUISITION FOR WAVEFORM RECORDING IN CONDITION MONITORING

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In many measurements of sound and vibration, a hard copy record is essential. The conventional pen/paper system has been improved, in recent years, with the advent of the exponential recording system using true RMS detectors.

A further advance has now been attained by replacing the traditional pen/paper writing system, with a digitally controlled electrical discharge writing system, using an aluminised paper.

Advantages can be stated as follows:-

1. Wave form recording as well as RMS recording.
2. Additional memory provides transient analysis to 6 kHz.
3. Digital control of signal provides for multi-channel operation with no synchronisation problems.
4. Digital format provides for easy accessory control.
5. Paper graticule generated simultaneously with signal recording, reducing paper costs.
6. Removal of the pen/paper inertia constraint provides accurate recording to high crest factor.

Utilisation of this form of recording mechanism, in a three-channel system, provides an excellent tool for acoustic and vibration investigations and applications in:-

1. Transient analysis.
2. Transmission time analysis.
3. Tri-axial vibration measurements.
4. Wave form analysis.
5. RMS recording to high accuracy.
6. Reverberation time studies.

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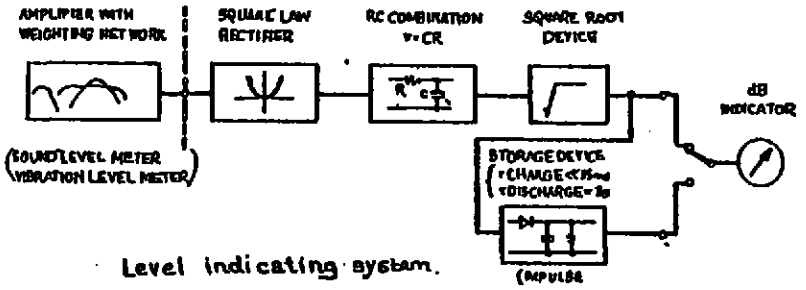
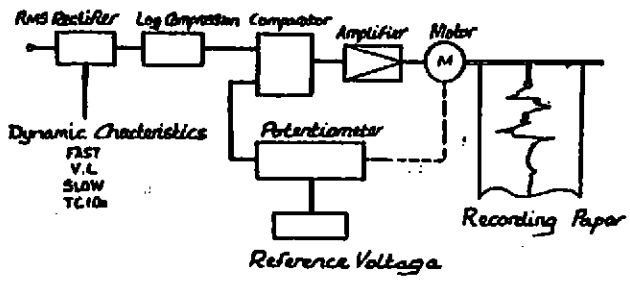
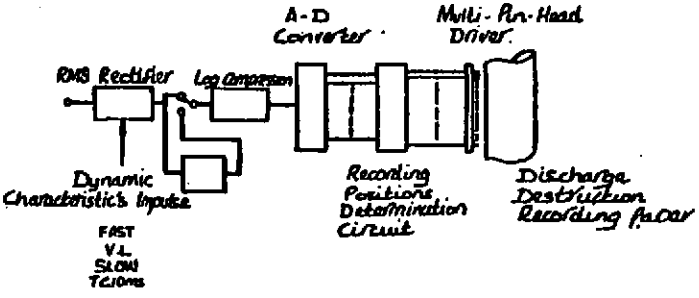


Level indicating system.



LR-04 Block Diagram.



LR-50 Block Diagram.

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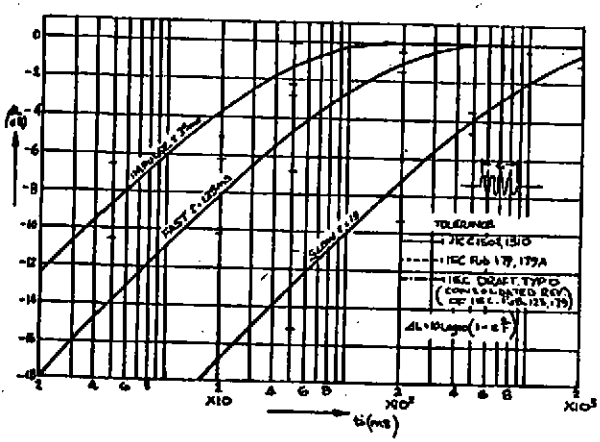
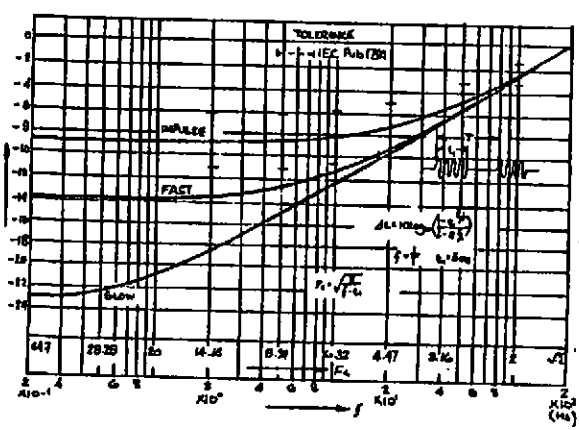


The response to a single burst signal.



The response to the sequence of burst signal

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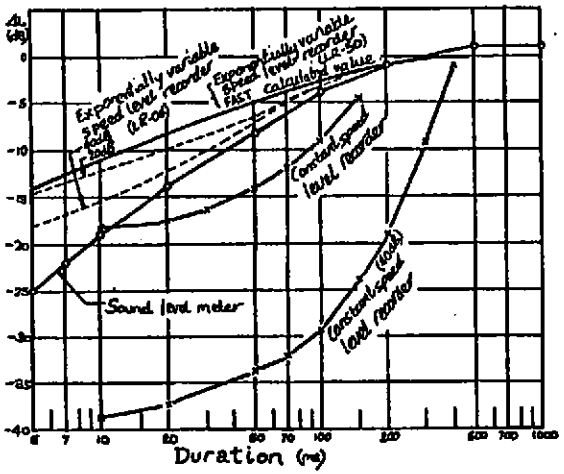

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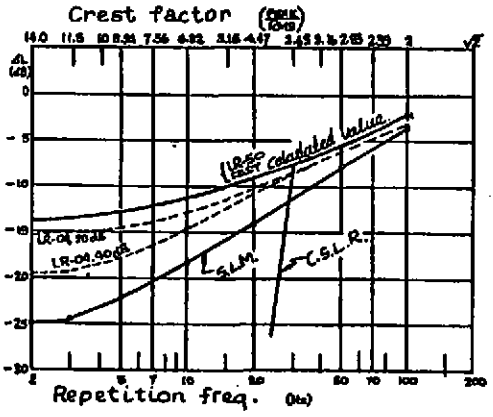

The response to the sequence of burst signal.