HIGHER TECHNICAL INSTITUTE

ELECTRICAL ENGINEERING COURSE

DIPLOMA PROJECT

# FORCED VITAL CAPACITY METER

E.794

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## SUMMARY

An electronic system capable of measuring the Forced Vital Capacity of lungs is discussed in this report.Such a system is used by doctors to help them in the diagnosis of lung diseases.

The circuit design is based on the rate of pulses generated by an optoswitch depending on the volume of expired air. Such a circuit has been designed, analyzed, constructed, tested and calibrated.The report that follows refers to the principles of physiological measurements relating to the respiratory system in man, constructional problems and how they were faced in practice.

Various techniques are used in modern spirometers in determining the various parameters for the lung function tests.Pressure transducers and pneumotachographs are used for converting the force of the expired air into corresponding electrical pulses.

Modern apparatus usually measure more than one parameter and mostly employ microprocessor/microcomputer technologies.But of course such equipment are very costly, over 1000 pounds.In this project only one parameter is measured and the cost has been set not to exceed 50 pounds.

The purpose of this project is mainly to give the opportunity to the author to study the principles of physiological measurements relating to the respiratory system in man and the problems relating to the design,construction, calibration and testing of a Forced Vital Capacity Meter.

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