

DEVELOPMENT OF AN
INSTRUMENTATION AMPLIFIER SYSTEM

by

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Project Report

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HIGHER TECHNICAL INSTITUTE
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ELECTRICAL ENGINEERING DEPARTMENT

DIPLOMA PROJECT

1993/1994

Project Number: E.889

Title:

"Development of an Instrumentation Amplifier System"

Objectives:

1. To study different types of Instrumentation Amplifier Systems.
2. To select, design, develop, construct, test and calibrate an Instrumentation Amplifier System. (Amplifiers/ Transducers).
3. To consider the possibility of interfacing the system to a computer.
4. Use the system as a demonstration unit.

Terms and conditions

1. The following items are provided.
 - a. Low noise Instrumentation Amplifier.
 - b. General type of amplifiers (741, FET etc)
 - c. Transducers (Thermistors. Potentiometers etc).

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INTRODUCTION

The object of this project is to develop an Instrumentation Amplifier System after having studied the various types of amplifiers (low noise instrumentation amplifier, 741, FET, etc.)

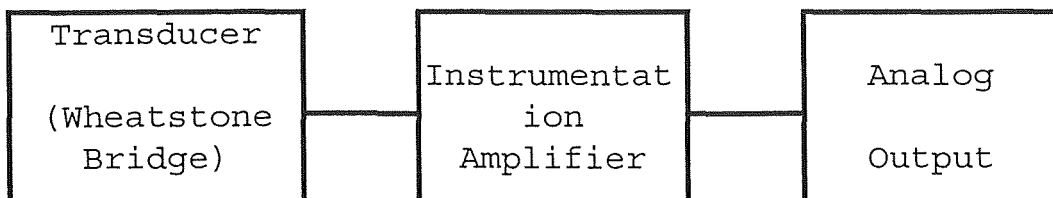
The Instrumentation Amplifier:

The Instrumentation Amplifier is one of the most useful, precise, and versatile amplifiers available today. It can also be specified as a closed loop, differential input, gain block.

The basic advantages of the above to the basic differential amplifier are the following:

1. The input impedance's at the two signal inputs are infinite.
2. High common-mode rejection ratio.
3. Easy gain adjustment.

Block diagram:



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