Department Of Electrical Engineering

Instrumentation Lab   EE-702

Experiment No.10   Interfacing of transducer output with microprocessor 8085 / 8086.

Objective :   Interfacing of output obtained from any transducer to Intel 8085 using earlier designed units- Instrumentation amplifier and filters.

Equipment/Apparatus required : Intel 8085 microprocessor kit, transducer with systems / kit, designed filters and instrumentation amplifier, power supply ($\pm$ 15V DC) ,ADC 0809 unit.
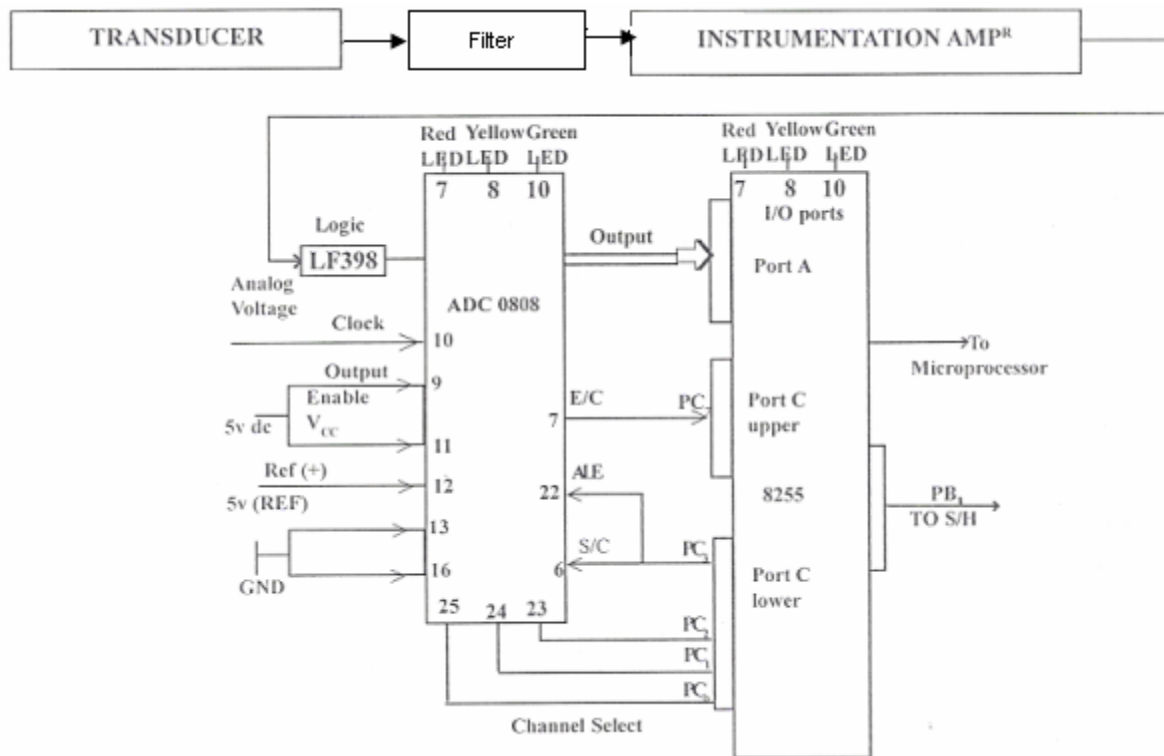
Interfacing circuit :

Figure1: Interfacing of ADC 0808 to Intel 8085 microprocessor

Procedure:

1. Connect analog output of transducer kit to the filter designed in experiment 8 and then to an instrumentation amplifier which you had designed in experiment no 9.
2. Check the analog output which must be in the range of 1 to 5 volts.
3. If the signal is ac makes sure it has frequency of order 5Hz otherwise it should be dc signal.
4. Connect analog output of an instrumentation amplifier to IN3 (pin no 3) of ADC0808.
5. Write program for interfacing in assemble language containing the following objective:
   e.g. 1 Temperature as process variable-
   - Display the input temperature Celsius and Fahrenheit in BCD, taking into account the Reference junction compensation, with updation every 10 seconds(selected from key board)
   - Test for calibration of whole system for the whole range.
   e.g. 2 Displacement as a process variable:-
   - Display the displacement in mm and cm in BCD updation in every 10 seconds (selectable)
   - Display the analog output of LVDT.

Observation Table:

1. Detailed objectives of problem chosen by you.
2. System calibration.

S.No.	Process variable analog reading	Digital Readout	Error
1			
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10			

Comment: On the system implementation and results.

Precaution:

- 5 volt DC applied to pin 12 i.e. Ref. (+) of ADC should be regulated and stable.
- see the waveform of analog output from transducer and signal conditioner before connecting to ADC.

Report:

- Program flow chart
- Assembly language program
- Difficulties encountered and solutions (if any)