Chapter-14

(Concept of Digital Instruments & Display System)

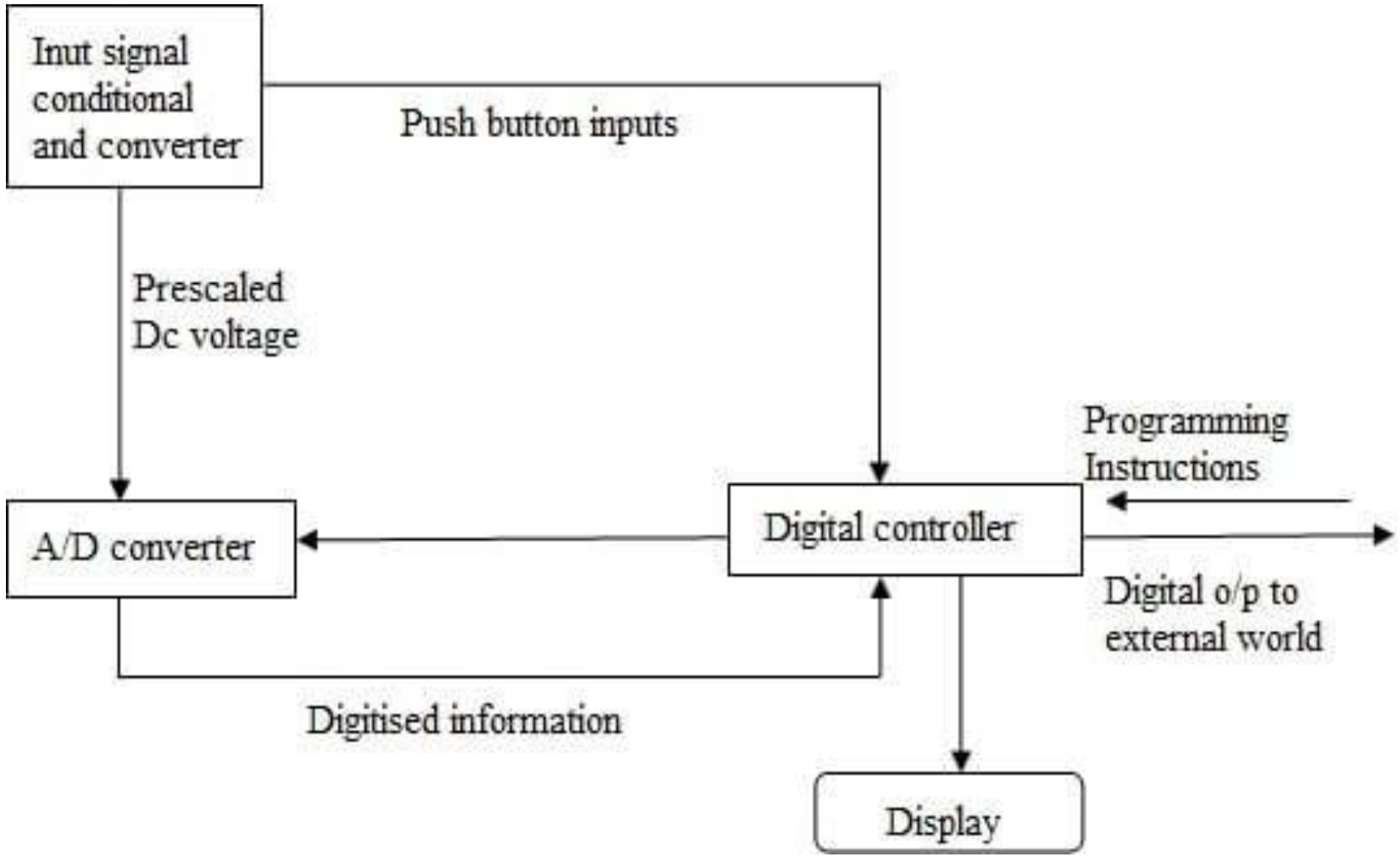
Lecture-1

Definition of Digital Instruments:

- Definition: The instruments that are used to express the measuring quantity in numeric format is known as Digital Instruments. A digitized information is somewhat easy to be handled and transmitted thus widely preferred nowadays.

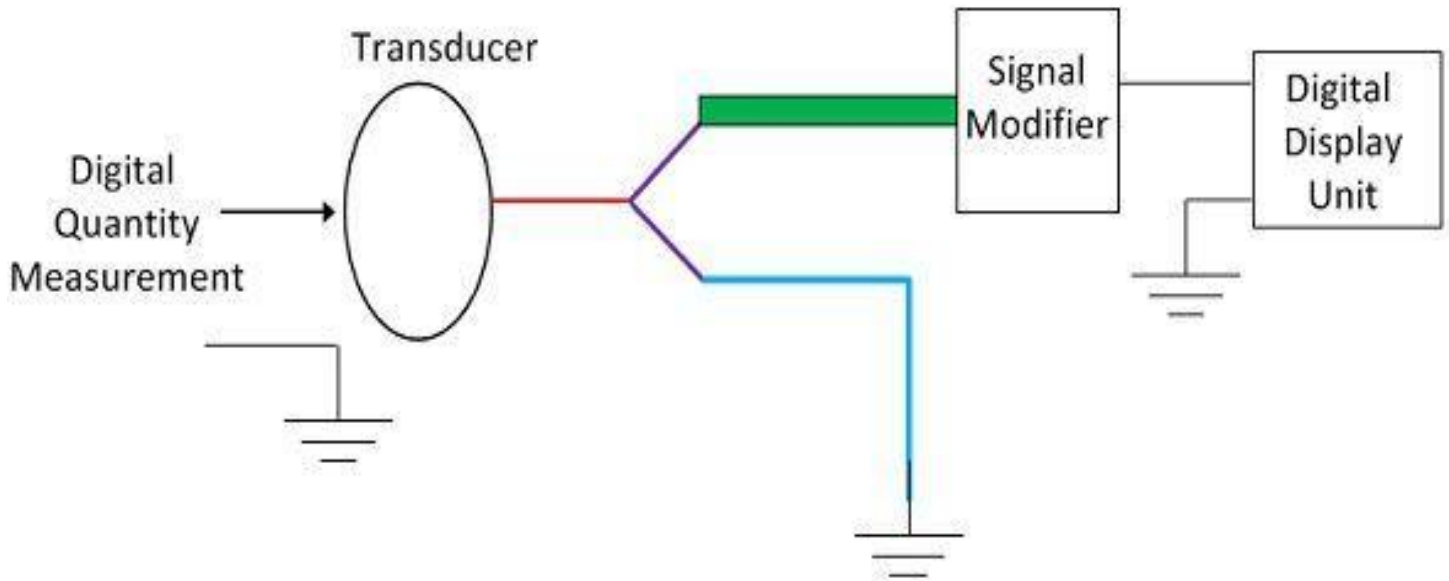
- Quantization is the basis of working of a digital instrument. It is an act of transforming an analog signal into its digital form. Digital instruments are composed of logic circuits that carry out measurement of the quantities.

- Due to several advantages of digital instruments such as high speed, errorless results, better resolution and greater accuracy over analog instruments, the popularity of digital instruments are increasing rapidly.


Inut signal conditional and converter
Push button inputs
Prescaled Dc voltage
Programming Instructions
A/D converter
Digital controller
Digital o/p to external world
Digitised information
Display

The transducer, signal modifier and the display devices are the important part of the digital instrument

- Transducer – The transducer is used for converting the non-electrical or physical quantities (temperature, displacement etc.) into an electrical quantity like voltage, current etc. which is easily measured by the meter. The transducer is not required for the electrical input.
- Signal Modifier – It is used for modifying the input signal of very weak strength.
- Display Device – The display device is used for showing the measurand quantities in the numeric form. Mostly, LED or LCD is used as a digital display.



Digital Instrument