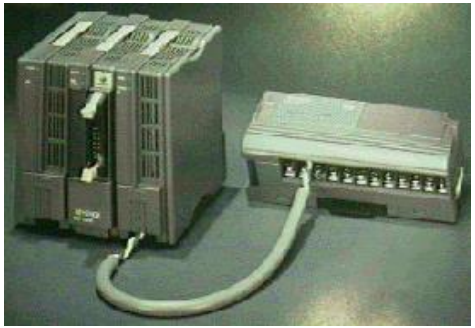
SNS COLLEGE OF TECHNOLOGY

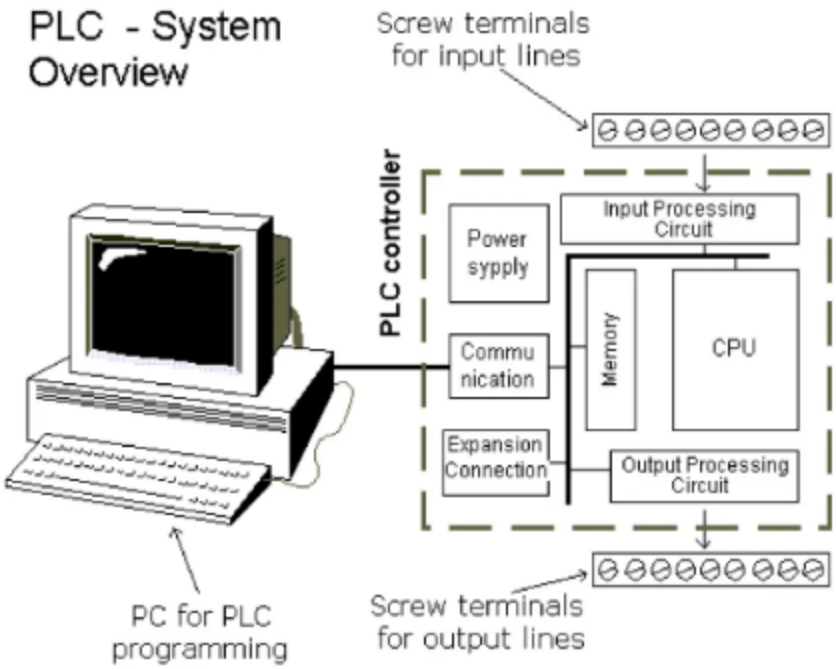
(An Autonomous Institution)
COIMBATORE-35
Accredited by NBA-AICTE and Accredited by NAAC – UGC with A++ Grade
Approved by AICTE, New Delhi & Affiliated to Anna University, Chennai

UNIT IV: INDUSTRIAL AUTOMATION

TOPIC: **Analogue inputs**



- CPU
- Power Supply
- Memory
- Input Blocks
- Output Blocks
- Communications
- Expansion Connections



- Input and output (I/O) modules cor
the PLC to sensors and actuators.

- Provide isolation for the low-voltag
current signals that the PLC uses
internally from the higher-power
electrical circuits required by most
sensors and actuators.

- Wide range of I/O modules availab
including: digital (logical) I/O modu
and analog (continuous) I/O modul

- Inputs come from sensors that translate physical or chemical phenomena into electrical signals.
- The simplest form of inputs are digital/discrete in AC/DC.
- In smaller PLCs the inputs are normally built in and are specified when purchasing the PLC.
- For larger PLCs the inputs are purchased as modules, or cards, with 8,16, 32, 64, 96 inputs of the same type on each card.

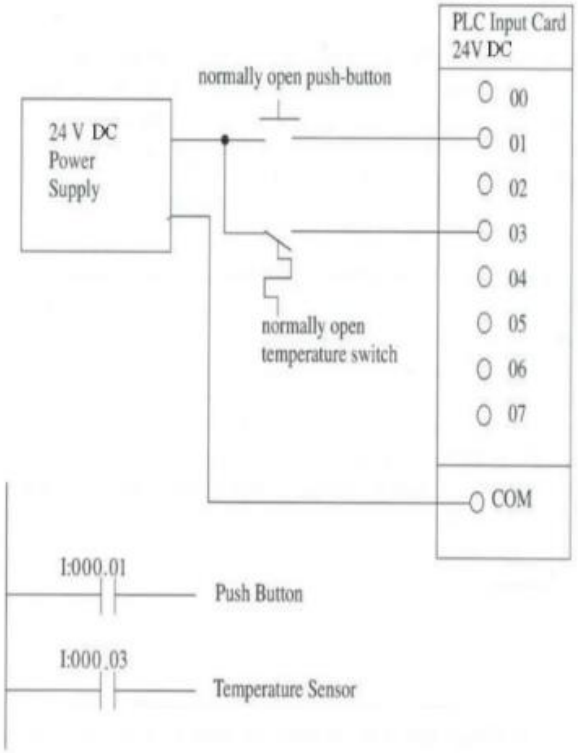
Inputs Modules

- The list below shows typical ranges for input voltages.

Inputs Modules

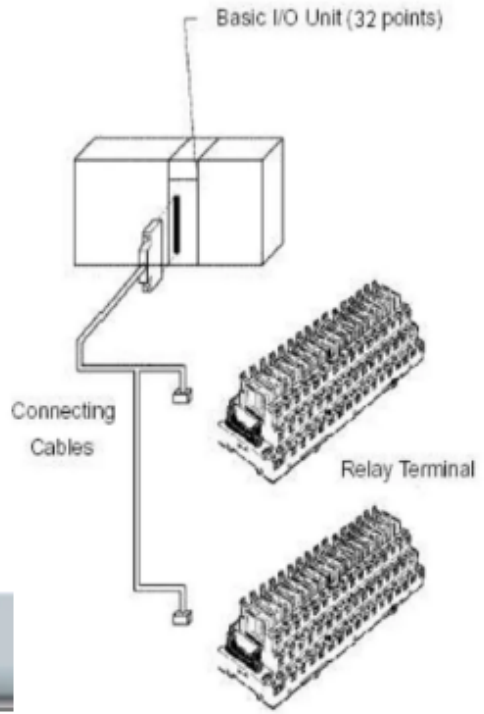
- 5 Vdc
- 12 Vdc
- 24 Vdc
- 48 Vdc
- 12 Vac
- 24 Vac
- 120 Vac
- 240 Vac

Example of Input Card



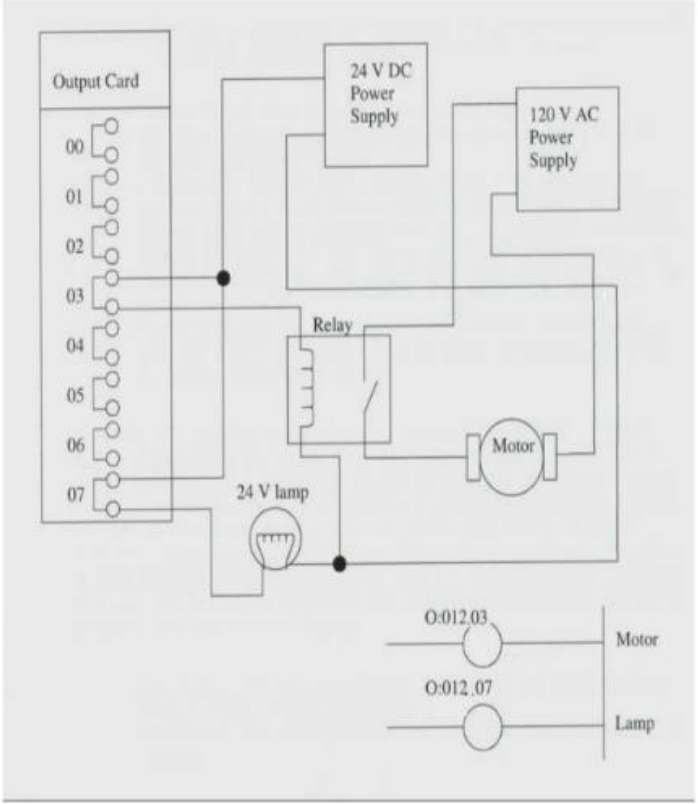
- The most important consideration when selecting relays, or relay outputs on a PLC, is the rated current and voltage.

- For transistor outputs or higher density output cards relay terminal blocks are available.
  - Advantage of individual standard replaceable relays



Relays

Example of Output Card



Analogue Cards

- Typical Analogue Input signals are:
  - Flow sensors
  - Humidity sensors
  - Load Cells
  - Potentiometers
  - Pressure sensors
  - Temperature sensors
  - Vibration

- Analogue Output signals control:
  - Analogue Valves
  - Actuators
  - Chart Resorders
  - Variable Speed Drives
  - Analogue Meters

- Typical Analogue Signal Levels
  - 4-20mA
  - 1-5 Vdc
  - 0-10 Vdc
  - -10 – 10Vdc

RECAP….

…THANK YOU