	K.S.RANGASAMY COLLEGE OF TECHNOLOGY, TIRUCHENGODE – 637 215 An Autonomous Institution, Affiliated to Anna University Chennai	EEE

ROLE PLAY

DEG / BRANCH	**B.E(ELECTRICAL AND ELECTRONICS ENGINEERING)**
SEMESTER	**VI**
SUBJECT CODE	**50 EE 603**
SUBJECT NAME	**ELECTRICAL DRIVES AND CONTROL**
DATE	**11.03.2022**
Topic of Role Play	**Parts of Electric drive**

Course Coordinator
Dr R.Balamurugan
ASP / EEE

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The students discussed the following in Role play,

Parts of Electric Drive

The block diagram of an electric drive is shown below, and the load in the diagram signifies different kinds of equipment which can be built with an electric motor such as washing machine, pumps, fans, etc. The electric drive can be built with source, power modulator, motor, load, sensing unit, control unit, an input command.

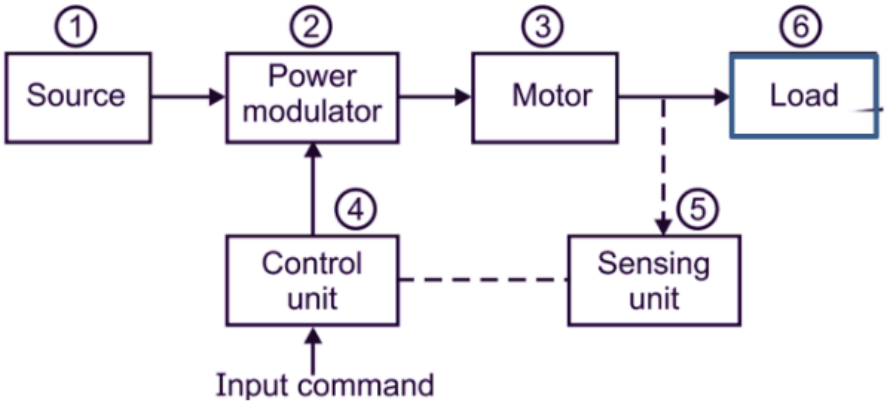

Fig. Electric Drive

Power Source

The power source in the above block diagram offers the necessary energy for the system. And both the converter and the motor interfaces by the power source to provide changeable voltage, frequency and current to the motor.

Power Modulator

This modulator can be used to control the output power of the supply. The power controlling of the motor can be done in such a way that the electrical motor sends out the speed-torque feature which is necessary with the load. During the temporary operations, the extreme current will be drawn from the power source.

The drawn current from the power source may excess it otherwise can cause a voltage drop. Therefore the power modulator limits the motor current as well as the source.

The power modulator can change the energy based on the motor requirement. For instance, if the basis is direct current & an induction motor can be used after that power modulator changes the direct current into alternating current. And it also chooses the motor's mode of operation like braking otherwise motoring.

Load

The mechanical load can be decided by the environment of the industrial process & the power source can be decided by an available source at the place. However, we can choose the other electric components namely electric motor, controller, & converter.

Control Unit

The control unit is mainly used to control the power modulator, and this modulator can operate at power levels as well as small voltage. And it also works the power modulator as preferred. This unit produces the rules for the

safety of the motor as well as power modulator. The input control signal regulates the drive's working point from input toward the control unit.

Sensing Unit

The sensing unit in the block diagram is used to sense the particular drive factor such as speed, motor current. This unit is mainly used for the operation of closed loop otherwise protection.

Motor

The electric motor intended for the specific application can be chosen by believing various features such as price, reaching the level of power & performance necessary by the load throughout the stable state as well as active operations.

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