

BRING AC/DC CONCEPTS TO LIFE FOR YOUR STUDENTS with IntelliSchematic™ AC/DC Drives PowerPoint™ presentations!

Schoolcraft Publishing now offers dynamic and animated PowerPoint presentations on AC/DC Drives concepts from IntelliSchematic. These PowerPoints are designed to enhance your presentation of AC/DC drives, AC/DC motors, brushless DC motors, and brushless servo motors. Seeing the parts of an AC/DC drive function separately and together will help your students visualize and better understand electrical principles.

This package consists of: 8 PowerPoint presentations. These presentations contain over 250 slides!

The animated PowerPoints are versatile and adaptable—they work well with any textbook, in a classroom or training environment, or as an excellent stand-alone visual resource.

Fundamentals of AC/DC Drives

System Technology

- Electromechanical System
- Voltage
- Current
- Frequency
- Sine Wave
- Resistance

Electromechanical System Components

- Power Source
- Controller
- Drive
- Motor
- Feedback Loop
- Coupling
- Machine

Horsepower, Torque & Speed

- Horsepower
- Torque
- Speed

Load Identification Concepts

- Constant Torque Loads
- Constant Horsepower
- Variable Torque Loads

DC Motors

Magnetism & Electromagnetism

- Magnetism
- Electromagnetism

DC Motor Terms

- Armature Current
- Base Speed
- Commutation
- Field Current
- Flux

DC Motor Operation

- Power Electromagnetism

DC Motor Classification

- Series Wound Motor

- Shunt Wound Motor
- Compound Motor
- Stabilized Shunt Motor

AC Motors

AC Motor Operation 1

- Breakdown Torque
- Cogging
- Slip
- Starting Current
- Starting Torque

AC Motor Operation 2

- Induction
- Induction Magnetism
- Motoring Action
- Slip Calculation
- Torque Protection

NEMA Classifications

- Design A
- Design B
- Design C
- Design D

Key Benefits for Teachers/Trainers:

- Flexible classroom options. Walk students through the explanation of concepts using the hundreds of provided slides, and then bring the concepts to life with the detailed and high quality animation that follows.
- Comprehensive coverage of AC/DC concepts.
- You can easily customize a presentation to your lectures and discussions by dropping them into your own PowerPoints for even more flexibility.
- Add your own text and information to our slides and animations to enhance and drive home your curriculum.
- With the Slide View option, students cannot just visualize the concepts but hear the explanations as well—great for quick review to help them prepare for exams and further enhance their understanding, freeing up your time.

Please Note: Animations are PC compatible only

Key Benefits for Students

- Helps you create “aha” moments as students can “see” AC/DC principles in action!
- Builds strong retention when student “see” how things work as opposed to just an explanation.

DC Drives

Control Section

Power Section

Armature Bridge

- DC Contactor
- AC/DC Conversion
- Field Bridge

DC Drive Functions

- Power Conversion

AC Drives

Control Section

Power Section

- DC Converter Section
- Filter Section
- Inverter
- Driver Inverter Classification

AC Drive Functions

Power Conversion

- Power Conversion Path
- AC/DC Conversions
- Voltage Spike Smoothing
- DC to AC Inversion

AC/DC Braking Methods

AC/DC Braking Methods

- Coasting
- Mechanical Braking
- Electrical Braking
- Dynamic Braking
- Regenerative Braking
- Deceleration Modes

Commutation

- DC Motor Commutation
- Brushless Commutation

Motor Performance

- Motor Specifications
- Speed Torque Curves

Brushless DC Motors

Motor Components

- Rotor
- Stator
- Feedback
- Holding Brake

Commutation

- DC Motor Commutation
- Brushless Commutation

Motor Performance

- Motor Specifications
- Speed Torque Curves

Selecting a Brushless Motor

- Constant Torque
- Distance in Motor Rev
- Maximum Rotational Speed
- Angular Acceleration of Motor Shaft
- Load Component Inertia
- Motor's Rotor Inertia
- Load to Motor Inertia
- Acceleration Deceleration Torque
- Peak Torque
- RMS Torque

Brushless Servo Drives

Servo Drive

Power Input Section

- Input Protection
- Rectification
- Filtering
- Bus Discharge

Power Output Section

- Transistor Types
- Three-Phase Bridge
- PWM

Control Section

- Commutation
- Loop Closure
- PID

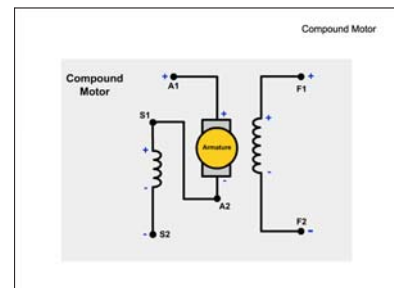
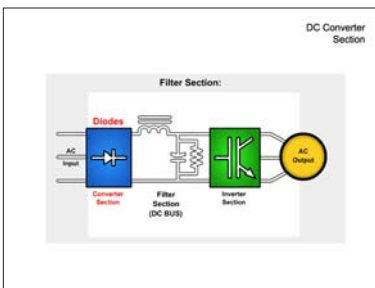
Input/Output

- Digital I/O
- Analog I/O
- Fieldbus

Power Cables

Servo Actuators

- Bottle Filler
- Edge Guide
- Press



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