

Thyristor Electric Motor Drives (EB03)

INDUSTRIAL POWER ELECTRONICS



Thyristor Electric Motor Drives (EB03) delivers hands-on skills in operating the same industrial-grade components used extensively in industrial electric motor drives. Students learn SCR control and PWM principles while acquiring skills including operating full-wave SCR DC motor drives, DIAC-controlled TRIAC AC motor drives and Schmitt Trigger-Controlled TRIAC AC Motor Drives.

The skills-based curriculum builds on the concepts learned in the prerequisite Industrial Power Electronics series. Thyristor Electric Motor Drives (EB03) presents fifteen additional skills and eight additional Flexponent™ panels for use with the JobMaster Learning Station (not included). Panels are easily added and exchanged allowing the workspace to be re-configured as multiple students progress through the course.

Core concepts are taught through self-paced e-learning curriculum. All the necessary resources, including printable instructions, wiring diagrams and troubleshooting charts, are available online, ready for use at the JobMaster Learning Station.

Instructors are also provided comprehensive resources, including a detailed instructors' guide. Teachers' versions of schematics and wiring diagrams as well as tips and tricks are all one click away.

With JobMaster, you can be sure your training program will deliver the skills needed for success in automated manufacturing careers!

JOB MASTER



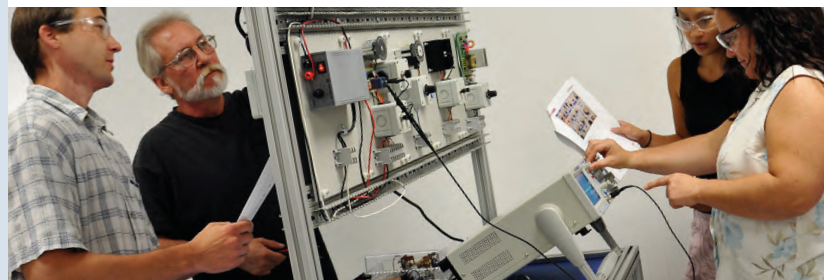
SKILLS-BASED TRAINING

The JobMaster™ Industrial Maintenance and Mechatronics Training teaches the specialized skills required for today's industrial technicians. JobMaster™ provides a superior blended learning solution for automated manufacturing training by combining industrial-grade components with engaging e-learning curriculum.

JobMaster™ courses are entirely skill-based, consisting of individual exercises that reproduce essential tasks performed by maintenance technicians, equipment operators, and machine repairmen. Each skill has been analyzed and field-tested by qualified technicians to teach the specific skills needed in the industrial environment.

intelitek's partners in development of the curriculum include twelve major US industrial companies, including Boeing, Caterpillar, Ford, GE, and US Steel.

JobMaster™, the new standard in industrial maintenance and mechatronics training!



Fully equipped Learning Station shown. Learning station sold separately. Some panels and components shown may be sold separately.

POWERED BY

LearnMate™

JobMaster™ courses are powered by LearnMate™- intelitek's innovative e-learning platform. LearnMate's self-paced interactive content may be deployed stand-alone or through the robust learning management system (LMS). The LearnMate™ e-learning suite provides everything needed for the ultimate blended learning experience:

- SCORM-compliant interactive content
- Anytime, anywhere accessibility
- Student and class management
- Grade tracking
- Skill/competency reporting mapped to national academic skill standards

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Thyristor Electric Motor Drives (EB03)

Materials Included

Order #14-EB03:

- Thyristor Electric Motor Drives (EB03) Course and Teachers' Guide
- Flexponent™ panels:
 - E034 DC Motor Panel
 - E081 SCR Panel
 - E082 Full-Wave SCR Drive
 - E083 TRIAC Panel
 - E084 DIAC Adjustable Resistors Panel
 - E085 TRIAC with Schmidt Trigger Panel
 - E088 Pulse Width Modulation (PWM) Motor Driver Panel
 - E157 Universal AC/DC Motor and PMDC Motor Panel

Materials required (sold separately):

- JobMaster™ Learning Station Order #10-LS00-0200
- Power Control Panel (120V): Order #10-PC04-0000
- * International step-down transformer package (Order #10-PC09-0000) required for international applications.
- Prerequisite courses
 - Single-phase and Three-phase Power Supplies (EB02B) Order #14-EB02B

Skills Acquired



- Skill 1 Locating an SCR and Drawing the Schematic Symbol
- Skill 2 Testing an SCR
- Skill 3 Connecting and Operating an SCR
- Skill 4 Confirming Full-Wave SCR Control
- Skill 5 Connecting and Operating a Full-Wave SCR DC Motor Drive
- Skill 6 Troubleshooting a Full-Wave SCR DC Motor Drive
- Skill 7 Locating the TRIAC and drawing the TRIAC Symbol
- Skill 8 Testing a TRIAC
- Skill 9 Demonstrating TRIAC Control Principles
- Skill 10 Locating a DIAC and Drawing the Schematic Symbol
- Skill 11 Connecting and Operating a DIAC-Controlled TRIAC AC Motor Drive
- Skill 12 Connecting and Operating a Schmitt Trigger-Controlled TRIAC AC Motor Drive
- Skill 13 Troubleshooting a TRIAC Motor Drive
- Skill 14 Demonstrating PWM Principles
- Skill 15 Connecting and Operating a PWM DC Motor Drive



INDUSTRIAL POWER ELECTRONICS

Thyristor Electric Motor Drives (EB03) is a fundamental course in the Industrial Power Electronics series which includes comprehensive instruction in industrial power, including test equipment, power supplies and motor drives. These courses deliver specific identified skills for mechatronics and industrial maintenance careers.

The Industrial Power Electronics series:

- Oscilloscope (EB01A)
- Digital Multimeter (EB01B)
- Single-phase and Three-phase Power Supplies (EB02B)
- Servo Motor Drives (EB06)
- and more!

Panel & Hardware Specifications

All included Flexponent™ panels meet the following specifications:

- Construction: 3/8" (9.5 mm) thick environmentally stabilized, chemically resistant, non-conductive, high density polyethylene.
- Terminal strips Industry-standard recessed and insulated fasteners rated for 50-amps at 600 volts.
- Dimensions 8"W x 11.5"H x 0.375"D (203 mm x 292 mm x 9.525 mm)

Panel E081: SCR



- Panel type: Single
- 1 Heatsink, TO-3, 76.2mm
 - 1 SCR thyristor, 25A
 - 2 Fault switches: 4A, 250V push-on/push-off momentary

Panel E034 : DC Motor



- Panel type: Double
- 1 Motor, 90VDC, .13hp
 - 1 Fault switch: 4A, 250V push-on/push-off momentary

Panel E082: Full-Wave SCR Drive



- Panel type: Single
- 1 Speed control, DC 115V, SCR
 - 2 Fault switches: 4A, 250V push-on/push-off momentary

Panel E085: TRIAC with Schmidt Trigger



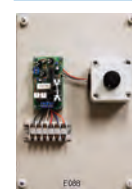
- Panel type: Single
- 1 Speed control, triac
 - 1 Switch, toggle, DPDT, flat lever

Panel E083: TRIAC



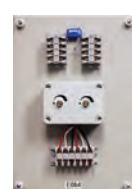
- Panel type: Single
- 1 Heatsink, TO-3, 76.2mm
 - 1 Triac, 15A, 600V
 - 2 Fault switches: 4A, 250V push-on/push-off momentary

Panel E088: PWM Motor Drive



- Panel type: Single
- 1 Speed control, PWM

Panel E084: DIAC Adjustable Resistors



- Panel type: Single
- 1 DIAC, 36V
 - 1 Capacitor, 0.1uF, 600VDC, radial, metallized polyester
 - 1 50K-ohm linear potentiometer 0.125 shaft
 - 1 500K-ohm linear potentiometer 0.125 shaft

Panel E157: AC/DC Motor and PMDC Motor



- Panel type: Single
- 1 1-phase motor, .08hp, 1725rpm
 - 2 Fault switches: 4A, 250V push-on/push-off momentary

Most courses require a JobMaster™ Learning Station, sold separately.

Some courses require other hardware purchased separately or as part of prerequisite courses in the same series.

All included and required materials are noted on each product data sheet.

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444 East Industrial Park Dr. • Manchester, NH 03109
Phone: 800-221-2763 • info@intelitek.com

www.intelitek.com

35-EB03-DS01 Rev-C

Affiliated with:



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