

# Electromagnetic Motor Starters (EA07)

## ELECTRICAL CONTROL SYSTEMS



**Electromagnetic Motor Starters (EA07)** guides students through hands-on activities using industrial motor controls. From wiring motor control circuits to troubleshooting, students gain practical experience in all aspects of industrial motor control, including testing and resetting overload protection, operating a three-phase reversing starter and troubleshooting a three-phase motor control circuit.

The skills-based curriculum presents eight critical skills using industrial magnetic starters, relays, and START-STOP motor control components mounted on six included Flexponent™ panels which attach to 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!

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[www.intelitek.com](http://www.intelitek.com)

# 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!**

P O W E R E D B Y

# 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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### Materials Included

#### Order #14-EA07:

- Electromagnetic Motor Starters (EA07) E-Learning Curriculum and Teachers' Guide
- Flexponent™ panels:
  - E002 START-STOP Control Panel
  - E004 Single Magnetic Starter Panel
  - E005 START-REVERSE-STOP Switch Panel
  - E006 Reversing Magnetic Starter Panel
  - E010 Three-Phase Motor Panel
  - E012 Transformer Panel
  - E016 Analog Relay Panel
  - E154 Lamps and Switches Panel
  - E155 HOA Switch Panel

### Materials required (sold separately):

- JobMaster™ Learning Station Order #10-LS00-0200
- Power Control Panel (220V) 3-Phase Order #10-PC06-0000
- DMM (Fluke Model 115 or equivalent)

### Skills Acquired

- Skill 1 Connecting a Control Relay Seal-In Circuit
- Skill 2 Connecting, Adjusting, and Operating a Single Magnetic Starter
- Skill 3 Testing and Resetting Overload Protection
- Skill 4 Connecting, Adjusting, and Operating a Three-phase Reversing Starter
- Skill 5 Connecting and Operating a Magnetic Starter for Jogging
- Skill 6 Troubleshooting a Three-phase Motor Control Circuit
- Skill 7 Troubleshooting a Reversing Three-phase Motor Control Circuit
- Skill 8 Performing Preventive Maintenance on Magnetic Starters

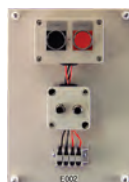
### Panel & Hardware Specifications

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-amperes at 600 volts.
- Dimensions
 

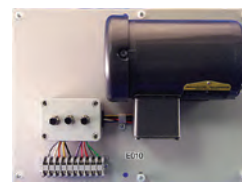
Single panel:	8"W x 11.5"H x 0.375"D (203 mm x 292 mm x 9.525 mm)
Double-wide	16"W x 11.5"H x 0.375"D (406 mm x 292 mm x 9.525 mm)

#### Panel E002: START-STOP Control



- Panel type: Single
- 1 Switch, pushbutton, momentary, black, NO w/contact block
  - 1 Switch, pushbutton, momentary, red, NC w/contact block
  - 2 Fault switches, momentary, push-on/push-off, 4A, 250V

#### Panel E010: Three-Phase Motor



- Panel type: Double
- 1 3-phase motor, 13hp, 1725 rpm
  - 2 Fault switches: momentary, push-on/push-off, 4A, 250V

#### Panel E004: Single Magnetic Starter



- Panel type: Single
- 1 Contactor, 9A, 43mm
  - 1 AUX Contact 1NO/1NC
  - 1 Relay, Thermal Overload, 0.8-1.2A
  - 2 Fault switches: 4A, 250V push-on/push-off momentary

#### Panel E012: Transformer



- Panel type: Single
- 1 Midget Fuse 2A
  - 1 Midget Fuse Block, 30A
  - 1 Transformer, 110V, 230 to 115V
  - 1 Transformer Finger Guard
  - 2 Fault switches: 4A, 250V push-on/push-off momentary

#### Panel E005: START-REVERSE-STOP Switch



- Panel type: Single
- 1 Switch, pushbutton, momentary, red LED, NC w/contact block
  - 1 Switch, pushbutton, momentary, green LED, NO w/contact block
  - 1 Switch, pushbutton, momentary, yellow LED, NO w/contact block
  - 2 Fault switches: 4A, 250V push-on/push-off momentary

#### Panel E016: Analog Relay



- Panel type: Single
- 1 Relay, 120V 2PDT 15A LED Test PB
  - 1 Relay, socket
  - 1 Timer Multi-mode 2PDT, 100-240V 0.055-60H
  - 1 Relay, Socket Mount

#### Panel E006: Reversing Magnetic Starter



- Panel type: Single
- 2 Contactor, 9A, 43mm
  - 2 AUX Contact 2NO/2NC
  - 1 Relay, Thermal Overload, 0.8-1.2A
  - 1 Interlock Unit
  - 1 Reversing Unit Load Side
  - 2 Fault switches: 4A, 250V push-on/push-off momentary

#### Panel E154: Lamps and Switches



- Panel type: Single
- 1 125V Raised Indicator Light, RED
  - 1 125V Raised Indicator Light, AMBER
  - 1 125V Raised Indicator Light, GREEN
  - 3 Switches, Toggle, SPST
  - 1 Switch, Toggle, 3pst, On/Off

#### Panel E155: HOA Switch



- Panel type: Single
- 1 Switch, 3 pos, maintained contact, Black
  - 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.

Affiliated with:



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