

TROUBLESHOOTING MOTOR CIRCUITS

Troubleshooting Motor Circuits (TMC) is the third in our core skills series of simulation-based training modules. In this module, your professionals will diagnose and repair more than 50 faults in a simulated commercial garage door circuit. This reversing motor starter circuit contains a three-phase motor, contactors, overloads, fuses, circuit breakers, limit switches, safety switches, pushbuttons, and control transformer.

This module is designed to allow professionals to learn and practice troubleshooting motor circuits, widely found in industrial and manufacturing settings such as manufacturing production lines, the petrochemical industry, utilities, and mining.

REALISTIC TOOLS AND REACTIONS

1. Shock and arc flash hazards
2. Motor windings and connections
3. Three-phase motor behavior including speed and current relationships
4. Motor control using switches, pushbuttons and contactors
5. Motor protection using overloads and fuses
6. Troubleshooting causes of failure including:
 - Single phasing problems
 - Dealing with back-feeds
 - Defective motors and components
 - Electrical and mechanical defects
 - Wiring problems and more



LEARNING OBJECTIVES

Your staff will:

- Learn the principles of operation of typical motor circuits and their components using guides, labs and simulations
- Use Simutech Multimedia's Systematic Troubleshooting Approach to master effective testing methods and techniques to safely resolve more than 50 motor circuit faults
- Develop and refine troubleshooting skills with many hours of hands-on learning

DESIGNED FOR

- Anyone who needs to learn to troubleshoot three-phase motor circuits and their controls
- Learning skills that are directly transferable to the workplace
- Worldwide use: simulations on resources provided for NEMA and IEC electrical standards

ADDED BENEFITS

- Challenges all expertise levels with multiple degrees of fault difficulty in each simulation
- Demonstrations, hands-on labs, and continuous performance measurement
- Step-by-step guides help users apply new problem-solving techniques to solve faults
- Printable resources including circuit diagrams, schematics and worksheets
- Extra and Genius Faults available for skill maintenance

THE SIMULATIONS

2 lab simulations will teach your professionals about motor behavior, control circuits, and protective components, as well as techniques for troubleshooting these circuits.

The main simulation—an industrial garage door and control circuit—includes a variety of components including: three-phase motor, transformer, contactors, overloads, fuses, pushbuttons, and limit switches.

Professionals will use a virtual multimeter and other tools to:

- Measure motor phase currents and winding resistances
- Locate and repair wiring problems
- Identify and replace defective components .

FEATURES

More than 50 circuit malfunctions provide hands-on practice with an industrial garage door simulationong

Lab exercises	5
Practice exercises	6
Practice faults	6
Guided faults	3
Skill test faults	18
Extra faults	16
Genius fault	4
Practice	Limitless

EVALUATING SKILLS

Managers can:

- Track skills development with comprehensive evaluations for each fault and overall individual performance
- Measure and record users' achievements in safety, accuracy, and efficiency
- Use all-inclusive reports to monitor professionals' progress, achievements, and areas that need improvement
- Print certificates when a professional finishes all skill test faults

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