

# Basic Motor Control Technology TP 1221

## The fundamentals of electric motor controllers

**FESTO**



### Highlights

- First-hand experience with an industrial switchgear
- Innovative fault-insertion method
- Safe, rugged system
- Comprehensive pedagogical material available in Festo LX or in print/PDF format
- Special focus on soft skills development
- 3D online simulator

**With the shift toward industrial electrification, control systems for electric motors are vital to the performance and protection of factory equipment. These systems range from the simple starting and stopping of electric motors, to directing energy flows in an automated factory.**

Many types of technical workers, primarily industrial electricians, industrial maintenance technicians, and mechatronics technicians, need to understand, install, maintain, and troubleshoot control circuits and their main controllers such as manual, automatic, reversing, and reduced voltage starters.

The equipment set Basic Motor Control Technology TP 1221 builds knowledge and skills in the fundamentals of industrial electric motors controllers.

A wide range of hands-on learning activities optimize the development of technical knowledge, as well as soft and troubleshooting skills – all prerequisites for being well prepared for the workplace.



Video → [bit.ly/TP1221-video](https://bit.ly/TP1221-video)

# Safe, hands-on study of basic motor controllers in the classroom

Students create control circuits by connecting modules that house power components (relays, contactors...) with a motor and a mechanical load, as well as control and protection devices. Students learn to install, test, and troubleshoot the most common motor controllers.

Modules can be combined with other learning solutions, such as the Electric Power Technology Training Systems, to expand learning possibilities.

## Learning content

- Lockout/tagout procedure
- Symbols and schematics – understanding and implementing
- Troubleshooting components and circuits
- Control and pilot devices
- Protections (breakers, overloads)
- Manual starters
- Two- and three-wire control
- Reversing starters
- Jogging control
- Time-delay relays
- Primary resistors starters
- Star-delta starters
- Motor testing and troubleshooting

## Main components

- Contactor \*
- Motor protective switch \*
- Overload relay \*
- Time-delay relay \*
- Control relay \*
- Electrical cabinet mounting panel
- Control and pilot devices module \*
- Disconnect switch module
- Cam switch module \*

## Necessary accessories

- Starting resistors module
- Three-phase power AC power supply and safety unit module
- Three-phase induction motor and mechanical load \*\*
- Measuring equipment

\* Fault-insertion capability

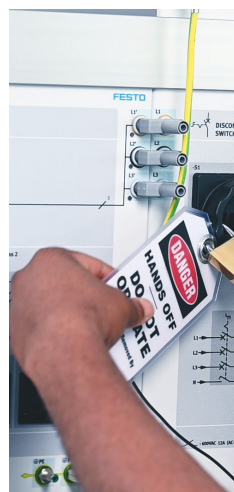
\*\* TP 1410 can be used as an alternative.



03



The online simulator allows students to perform practical experimentation remotely. Visit our website for more information and a free trial:  
→ [bmcsim.festo.com](https://bmcsim.festo.com)





01 Courseware is available as an eLab course on Festo LX, or in print or PDF versions.

02 A wide range of hands-on exercises offer extensive, industry-oriented training.

03 Power components are easily installed on a standard DIN rail.

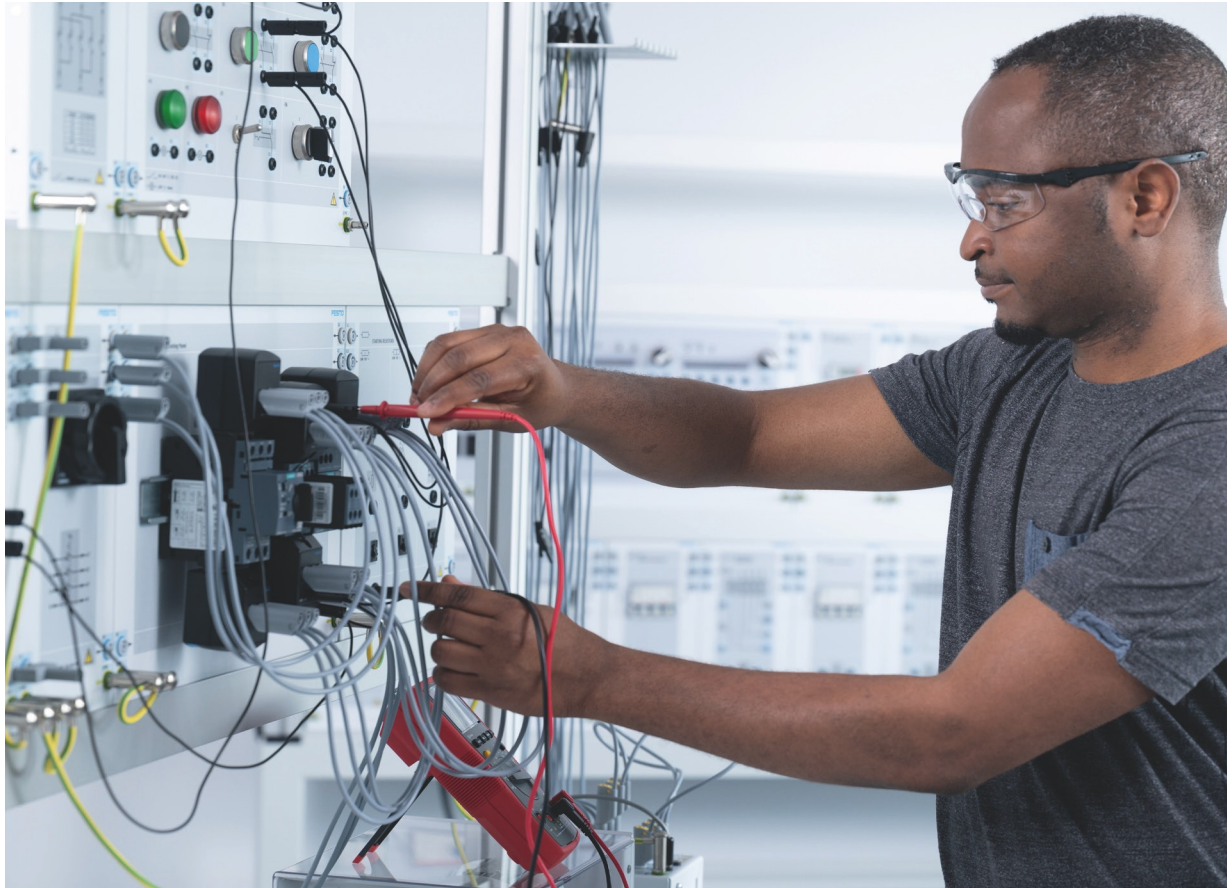
04 Activities cover safety issues to instill safe work practices.

05 Teachers can insert faults using hidden fault switches (modules) and fault keys (components).

06 The system is compatible with equipment set TP 1410 Servo brake and drive system.

01

02



04

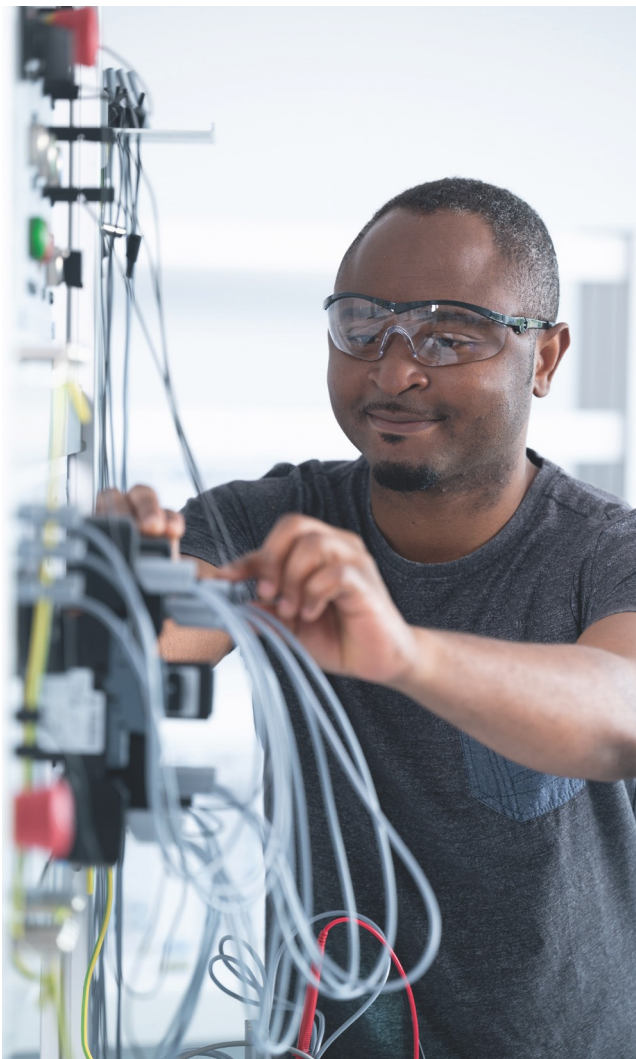
05

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TP 1221 is also available as a portable learning system.

Watch the presentation video to see the system in action and visit our website for all details.

→ [Bitly.com/TP1221-video](https://bit.ly/TP1221-video)

→ [Website page TP 1221](#)

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