Coming Soon! Electric Vehicle AC Charging Station Trainer

Optimize electric vehicle supply equipment (EVSE) operation

North American version illustrated

Highlights

- Turnkey, practical course
- Focus on AC charging, complemented with essential DC charging concepts
- Safe, compact training equipment with commercial components
- Two versions: North American and European
- North American version compatible with any standard electrical outlet
- Fault-insertion capability

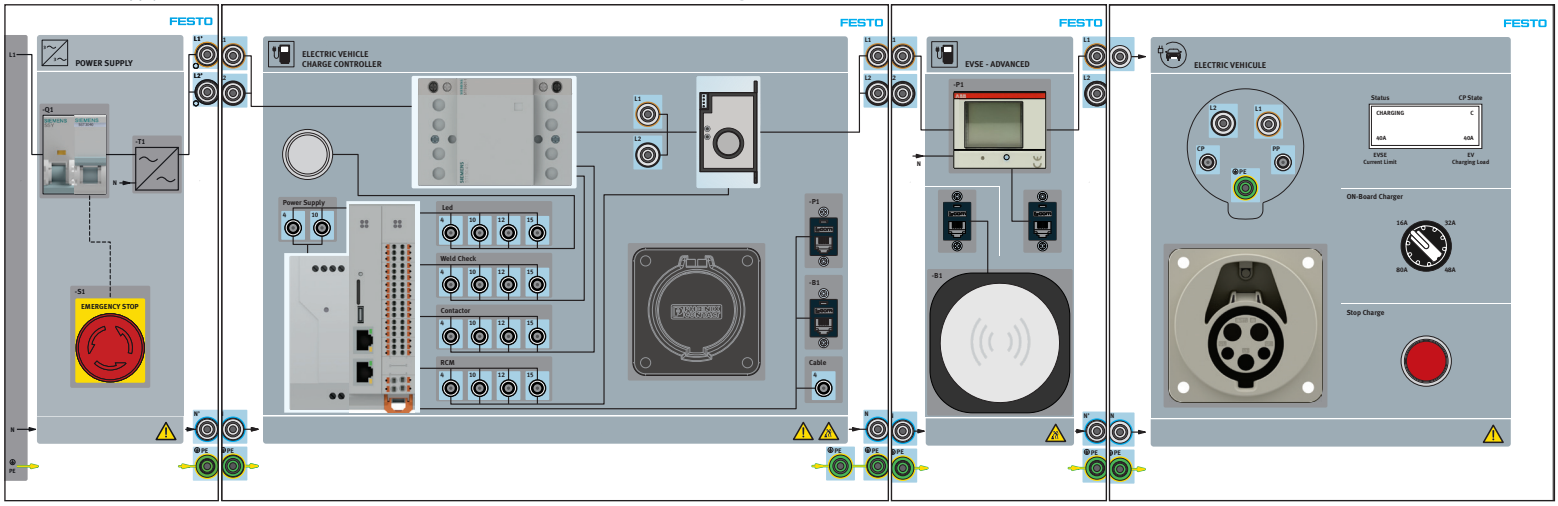
The EV charging infrastructure is expanding rapidly to support the electrification of transportation. Optimal and continuous operation of charging stations requires specialists with sound commissioning, testing, and troubleshoot skills.

While the idea of installing off-the-shelves wallboxes into the lab has its appeal, it may not offer the optimal environment to develop these skills. Their cramped, often all-in-one design limits study and hands-on experimentation opportunities, not to mention the risk of electrical hazards and the absence of pedagogical materials.

To address these challenges, the EV Charging Station Trainer offers a **pragmatic solution** inspired by existing certifications from SAE and EVITP, as well as input from instructors and leading manufacturers of EV charging stations and EVSE equipment.

The **course** develops **essential skills for electricians and EVSE technicians**. They perform various realistic practical tasks on **training modules** while using the same tools and following the same protocols as in the workplace.

Power supply module | EV charge controller module | EVSE advanced module | EV module (EV simulator)



The training equipment

Components involved in the charging process are clearly identified and logically grouped into **four compact modules** :

- The **power supply module** distributes electrical power and includes safety mechanisms: emergency stop, breaker, and fuse.
- The **charge controller module** features components that manage the charging process, ensure safe and efficient power transfer, and enable communication between the EVSE and the EV.
- The **EVSE advanced module** includes an energy meter and RFID authentication system typically used in commercial applications.
- The **EV module** is an **EV simulator** that replicates key characteristics and behaviors of various EV types during charging, including potential faults.

Modules can be installed in a workstation equipped with DIN A4 rails or on a table. Learners use safety cables to connect the power and control circuits according to electrical schematics. Teachers can trigger **faults using switches** to reinforce diagnostic and troubleshooting skills.

Connecting two charging station trainers enables learners to practice **load management**, enhancing their understanding of optimizing multiple stations on a shared electrical supply.

Two versions (North America and Europe) are available to account for different plug types and standards. The training equipment meets **industry standards**, including SAE J1772 (North America version only), IEC 61851-1, and OCPP 1.6J. The charge controller is future-ready, supporting emerging technologies such as ISO 15118, which introduces Vehicle-to-Grid (V2G) communication, Smart Charging, and Plug and Charge (PnC) capabilities. This safeguards hardware against obsolescence.

For all details about the upcoming EV Charging Station Trainer, contact a sales representative or an authorized dealer.

The course

Engaging videos, animations, and images facilitate **understanding of the charging station and electric vehicle system**, emphasizing the functions and interactions of their components. This is achieved through observation and testing. The course breaks down complex ideas by clearly identifying components and differentiating control signals from power.

Learners engage in self-paced **study and hands-on sessions**. Each section has clear learning objectives **aligned to professional requirements**. Questions throughout the course reinforce learners' comprehension and mastery of key concepts. Practical lab exercises reinforce theoretical knowledge. A test assesses learners' proficiency.

Key learning objectives:

- Know and interconnect components of typical EVSE.
- Learn key concepts of AC and DC charging.
- Take measurements and test installations with specialized instruments.
- Use systematic troubleshooting to address common issues.
- Study load management.
- Explain the scope of ISO 15118 and its potential applications.
- Learn about Open Charge Point Protocol (OCPP) and its role in remote EVSE management.

The 10-hour course, available on Festo LX or PDF format, accommodates time constraints of various training programs while delivering a rich educational experience.

Learners gain confidence and proficiency in maintaining most charging stations on the market, regardless of the brand.