PRELIMINARY

Demonstration boards

MI 3333 EV TrainingVehicle

Equipment for laboratories and Schools

The MI 3333 EV TrainingVehicle is a versatile e-mobility training platform with several exercises for training personnel coming into contact with electric vehicles and their safety devices. It is used for training in safety precautions and procedures, supported with exercises, presentations, video material, and test and measurement activities with real-world examples. As such it supports simulation of errors and failures on AC sockets, cables, engine, inverter, batteries and on the car body. Pass and fail parameters can be adjusted by 11 switches in different parts of the vehicle (training platform).

Additionally, the MI 3333 EV TrainingVehicle can be used for training how to approach orange high-voltage parts safely, including how to use a jumper. It can simulate a high voltage (high power) 300 V vehicle battery (divided into four sub batteries connected in series 2 x 150 V) and its internal resistance (as low as 50 or 100 mΩ). All for the purpose of training how to assess the quality of batteries.

The MI 3333 EV TrainingVehicle essentially teaches the importance of low resistances and bonding connectivity between the vehicle body, engine, inverter, and battery in general electrical safety (through the use of the 4-wire Kelvin method) and the importance of insulation quality (can be evaluated on energized/de-energized parts).

SUPPORTED TESTERS

- MI 3132 EV Tester
- MI 3288 Earth Insulation Tester
- MI 3144 Euro Z 800 V
- MI 3155 EurotestXD

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PRELIMINARY

TRAINING FUNCTIONALITIES AND FEATURES

- Electrical vehicle (EV) system simulating a fully operational electric vehicle and its safety devices.
- Approaching orange parts with care (special warnings) and using protection methods, barriers, and a jumper.
- Safety training on working with a high voltage battery.
- Charging from single-phase or three-phase EV AC sockets.
- High voltage battery failure, BMS A and B in error.
- High voltage battery AB internal resistance measuring and comparing, with simulated fault on the B battery.
- High voltage lines, engine, or battery positive terminal to ground insulation failure.
- High voltage lines, engine, or battery negative terminal to ground insulation failure.
- AC charging socket insulation failure.
- AC charging installation cable failure on line 1 or line 2 (internal cables).
- Grounding and bonding equalization problems between the car's body, engine, inverter, and REESS battery.

RECOMMENDED SAFETY EQUIPMENT

- Cotton Safety gloves
- Voltage safety gloves
- Arc rated gloves
- Helmet with shield

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