



STUDY OF THE ENERGY BEHAVIOR OF ELECTRIC VEHICLE CHARGING

MATERIAL PART :

- a specific instrumented and communicating electrical cabinet with :
 - **Embedded communicating computing** with API, PC HMI (windows10 iot) and data server for Augmented Reality.
 - **controlled dimmer**
 - communicating **M221 PLC**
 - phase control device
- a three-phase **load of 22kW**
- a **three-phase Schneider communicating charging station** with 2 sockets (T2 and 2P+E) and equipped with an **RFID reader**
- a three-phase mode 3 charging cable with Type 2 plug
- A touchpad

ACCOMPANYING DIGITAL DOCUMENTS :

- a **complete educational** file with a training course offering activities in the form of professional practical work spanning two years of training.
- a **resource folder** including:
 - the particular technical specifications and functional specifications.
 - Schneider product data sheets.
 - electrical diagrams.
- a **technical file** of the didactic training support with:
 - the instructions for use with the functional and structural description.
 - the commissioning and maintenance manual.

Composed of one or more **charging stations**, this educational system reproduces the energy behavior of **charging a vehicle up to 22kW** within an infrastructure of an electric vehicle charging system using modes 1, 2 and 3 with type 2 and 2P+E sockets.

Responding to the requirements of the electrician profession, this teaching aid makes it possible to carry out educational sessions such as commissioning, carrying out interventions (**Analysis, diagnosis, maintenance, programming, configuration**), electrical and energy measurements, standards compliance checks, the use of Industry 4.0 digital tools with **augmented reality...**



produced

transversal activities with applied physics lessons

operation of the general low voltage switchboard and its measurement unit

Augmented reality

a tablet for do everything :

- ⊙ remote HMI
- ⊙ maintenance by AR
- ⊙ dynamic activities
- ⊙ access to technical documents

► INDUSTRY OF THE FUTURE ◀

The **Augmented Reality** provided is a mobile application allowing diagnostic assistance and corrective and preventive maintenance. The application allows **dynamic visualization** of specifications, electrical diagrams as well as real-time data and guided learning scenarios.

Ability to : modify/build/use own AR.

This training support offers the possibility of managing a fleet of charging stations by taking into account energy data, management of vehicle charging, load shedding of terminals, etc...

AUGMENTED REALITY



OPTIONAL ADD-ONS

- second EV charging station
- second single-phase cable household socket → type2
- analyzer energy quality
- tool diagnostic
- thermal camera
- recorder power and energy

