STUDY OF A WALLBOX FOR ELECTRIC VEHICLE

This educational solution, available in 2 references, allows you to discover and study the operation of an electric car charging station for domestic use.
The learner will become familiar with the installation, configuration and testing of a charging station.
The 1-M version also allows wiring of the control, removal and installation of IRO / IRL tubes.
Put yourself in the shoes of an authorized installer by applying the NFC15100 verifications and by discovering the compulsory E.V.Ready self-checking sheets during an installation.

EDUCATIONAL OBJECTIVES

- **Study an electric vehicle charging station.**
- **Wire a charging station for a domestic electric vehicle (1-M version only)**
- **Commission an electric vehicle charging station.**
- **Test and diagnose an electric vehicle charging station.**
- **Study an access command by code keypad and RFID badge**
- **Study a communication by Wifi or Bluetooth**
- **Study the different types of electric vehicle charging sockets**

Educational support on DVD

- Instructions and installation
- Technical notices
- Theoretical reminder on mode 3 type 2 sockets
- Teaching scenarios in the form of a TEACHER / STUDENT type practical work.
- Wiring diagram

FULL VERSION FOR WIRING AND PROGRAMMING

ref. BORNELEC1-M

SUPPLIED CONFIGURED | AUTONOMOUS WIFI NETWORK | Bluetooth | TEACHING RESSOURCES STUDENT / TEACHER

Chassis on wheels. Weight: 65 kg
Dimensions: 1200 x 650 x 1860mm.
2 12mm melamine panels with an area of 1200 x 1600mm.
Power supply by 3 m 2P + E 230VAC 50Hz power cord.
The model is delivered wired and ready to operate.

COMPACT VERSION FOR PROGRAMMING

ref. BORNELEC2-M

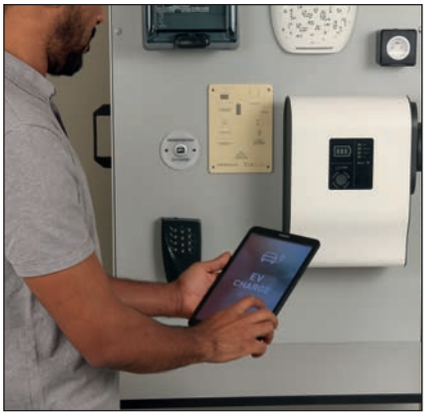
SUPPLIED CONFIGURED | AUTONOMOUS WIFI NETWORK | Bluetooth | TEACHING RESSOURCES STUDENT / TEACHER

Chassis on wheels. Weight: 80 kg
Dimensions: 750 x 730 x 1840mm.
2 19mm melamine panels with an area of 1400 x 670mm.
Power supply by 3 m 2P + E 230VAC 50Hz power cord.
The model is delivered wired and ready to operate.

STUDY OF A WALLBOX FOR ELECTRIC VEHICLE

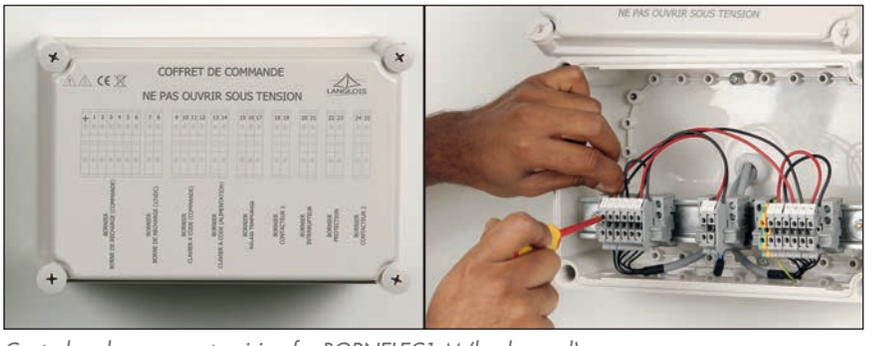
PRACTICAL WORKS	REFERENCES	
	BORNELEC1-M	BORNELEC2-M
Wiring a switch	✔	
Wiring a programmable keyboard	✔	
Wiring a clock	✔	
Wiring of a control circuit of a charging station	✔	
Cutting IRO / IRL tubes	✔	
Removal and installation of IRO / IRL tubes	✔	
Clock setting	✔	
Configuration of the RFID keyboard (daily use, user management, choice of operation by code, bage, keyboard, keyboard + RFID badges)	✔	✔
Creation of the maintenance book for a charging station	✔	✔
Performing checks of standard NFC 15100	✔	✔
Discovery of E.V ready self-checking sheets	✔	✔
Analysis of the signals received by the charging station (presence of voltage, charge with and without fan, error) using the simulator provided and an oscillocope.	✔	✔
Wifi switch configuration	✔	✔
Configuration of the charging station in wifi thanks to the Webserver integrated in the terminal (visualization of operating status, configuration of the kit communication, choice of charging mode, time programming, history, intensity setting, locking, charging stop, etc.)	✔	✔
Operation of the free EVCharge application in Bluetooth (history, cost of consumption, display of the state of the charging station)	✔	✔

Charging station tester delivered with the model.



The charging station communicates via Wifi or Bluetooth.The locally created wifi network is specific to the model. It is isolated from the WiFi network of your building.

Power supply (back panel)



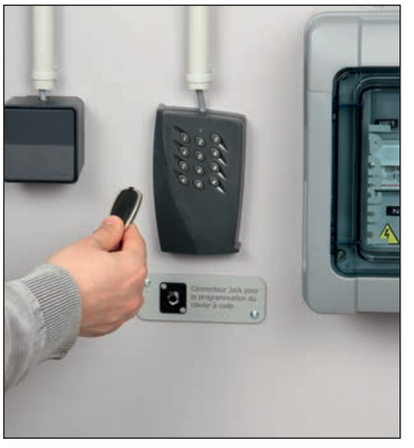
Control and components wiring for BORNELEC1-M (back panel)

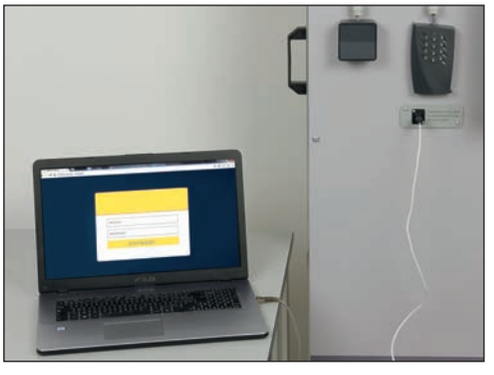
STUDY OF A WALLBOX FOR ELECTRIC VEHICLE

Components on the panels	BORNELEC1-M	BORNELEC2-M
3.7 kW to 4.5 kW single-phase electric charging station (one mode 3 type 2 socket) with integrated web server allowing the setting of the station via the Wifi switch or operation by the user via Bluetooth. Application to download free from Play Store® or Apple Store®	✔	✔
RJ45 Wifi switch (connection on 2P + E socket)	✔	✔
Code keyboard with USB port for programming via the software supplied with the model (3 operating modes per RFID badge and / or code)	✔	✔
USB socket for keyboard programming	✔	✔
2P + E surface mounting socket	✔	✔
Waterproof modular electric panel	✔	✔
Differential circuit breaker 30mA	✔	✔
Undervoltage coil	✔	✔
Modular contactor	✔ (2)	✔ (1)
Surge arrester	✔	✔
Clock	✔	
Surface switch	✔	
Box containing industrial terminals for wiring components in 12Vdc	✔	
IRO / IRL tubes for cable passage	✔	
3D screen-printed side representing a car garage	✔	
Melamine tablet (PC support, oscilloscope, accessories ...)		✔
Supplied accessories	BORNELEC1-M	BORNELEC2-M
1 electric vehicle charging station tester to measure, test and simulate signals from an electric vehicle. BNC terminal allows you to observe these signals using an oscilloscope	✔	✔
2 RJ 45 cords (1 meter and 3 meters)	✔	✔
1 communication cable for programming the keyboard via a PC	✔	✔
2 RFID badges for the keyboard	✔	✔
Keyboard programming software	✔	✔
6m of IRO / IRL tube	✔	

Modular electrical panel

Code keypad with RFID badges provided. Remote socket for PC connection for keyboard programming

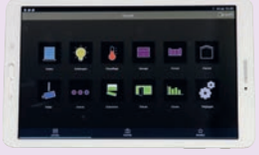




Keypad setup via supplied software

RECOMMENDED OPTIONS

Samsung® tablet



ref. TAB-97

Oscilloscope

ref. GDS1072A-U

Portable multimeter

ref. ST9905

Electrical installation tester

ref. XE1

Extension M / F connector type 2
Length of 4 meters

ref. EV-CABLE