Charging solutions
for electric & hybrid vehicles

2018-2019 Edition

CAHORS
E-MOBILITY

A key player in the market!

For more than 100 years, the CAHORS Group has focused its expertise and technological innovation capacity for energy management and supply. It has become one of the leaders in the low and medium voltage market, in Europe and throughout the world.

Bespoke infrastructures in France for public and private domains

CAHORS offers charging solutions suited to all types of localisation, use and travel. An electric vehicle's charging time depends on the user's potential stopover time, as well as on the localisation of the charging infrastructures: usually limited and short term stops in the public domain, and longer stops in the private domain.

How the vehicle is used is vital when choosing the technical solution deployed:

1 - local drive (home-workplace)

2 - transit and travel (medium and long distance),

3 - tourism (a few hours when visiting a site), etc...

More than 2000 charging terminals deployed in France since 2013

To guarantee optimum supply quality and network continuity, CAHORS offers a range of distribution substations integrating MV/LV transformers, Medium Voltage switchgear, LV cabinets and boards, as well as network management hardware. Our components are manufactured in our French plants. Together, our equipment offers comprehensive and economic solutions, bringing together all of CAHORS's know-how.

CAHORS: Expertise from the electricity networks to the charging terminals

Private substations NF C 13-100
Public substations


MV switchgear


MV/LV transformer


LV board

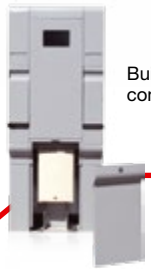

Underground grid control


Feeder remote terminal unit

LV connection

Charging terminals

≤ 36 kVA


Built-in connection box

36 to 250 kVA


Connection and metering cabinet


> 250 kVA

MV metering cabinet

Solutions suited to each use!

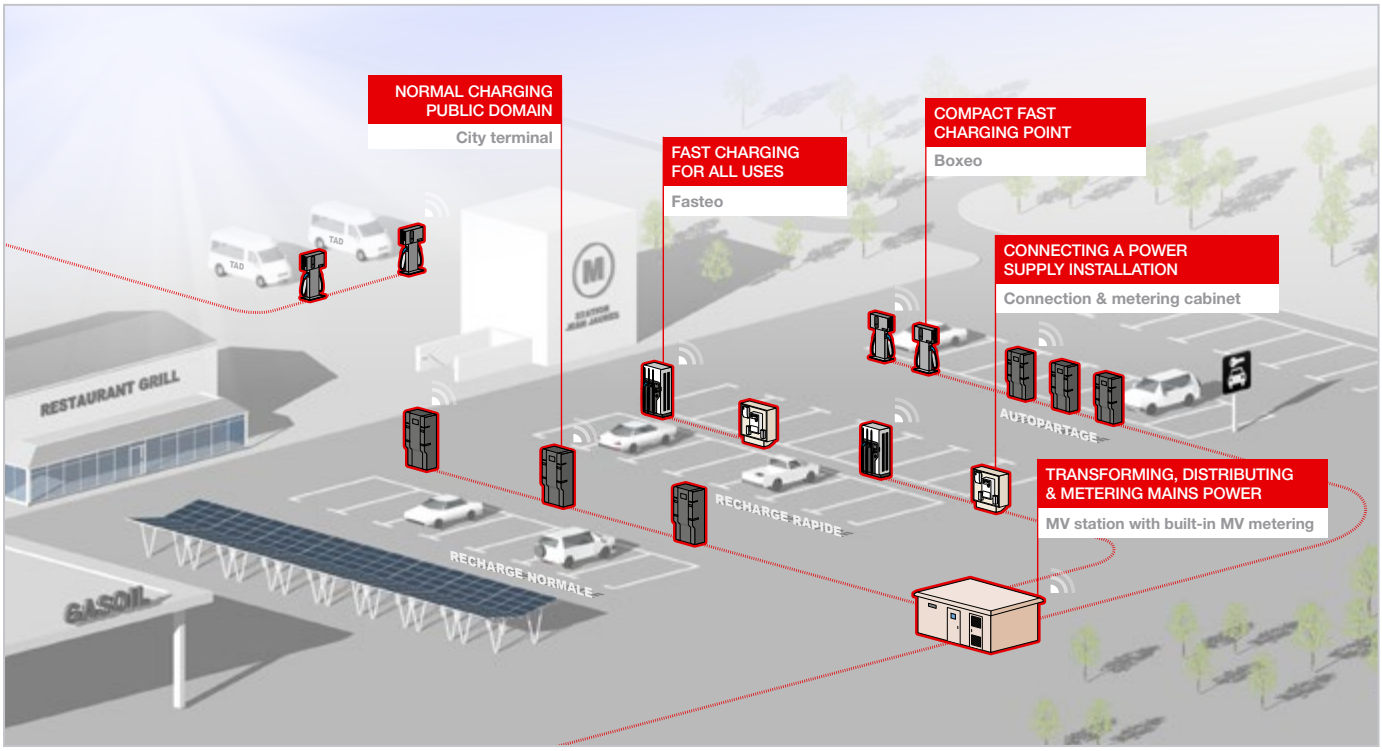
CAHORS offers solutions suited to all types of charging:

- **Normal charging** (3,7 or 22 kW) for charging in 1 hour or more

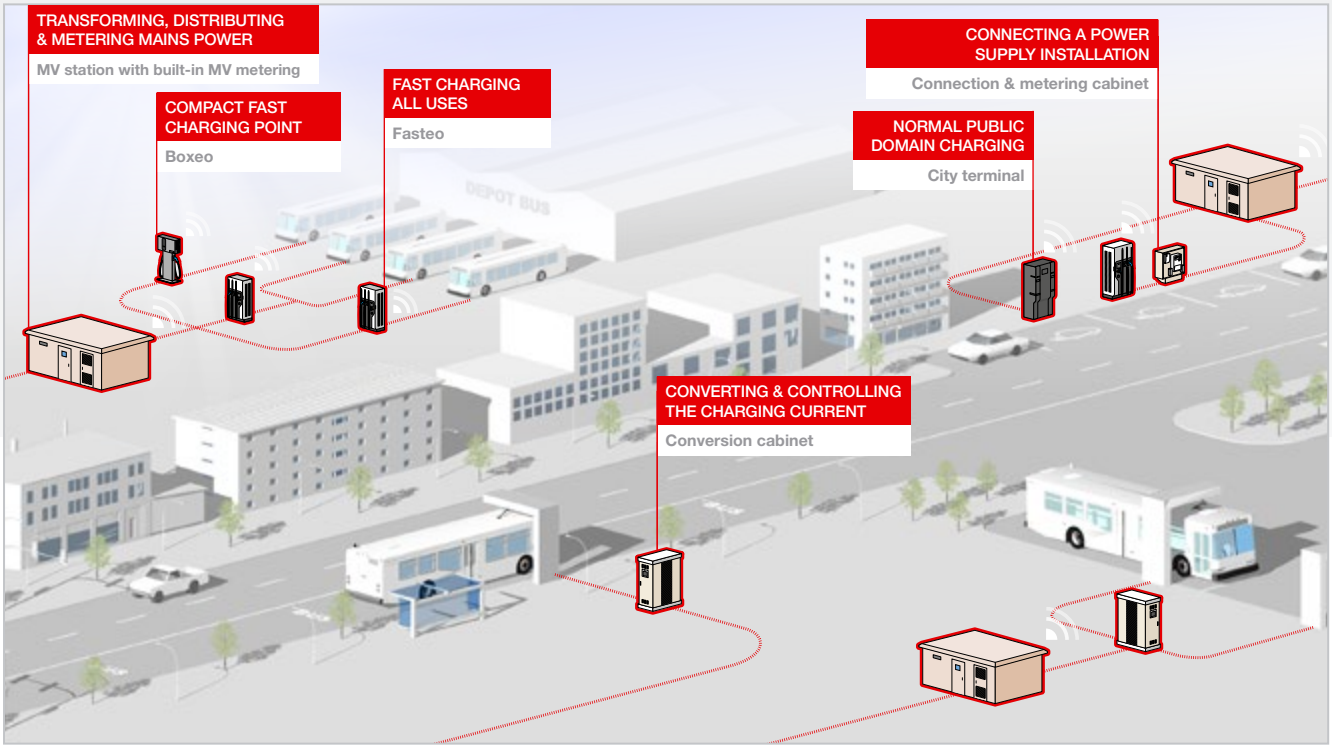
- **Fast charging** (25, 50 and up to 150 kW) for charging within 1 hour, even 30 min for ultra-fast charging (≥ 100 kW).

View our product manufacturing video

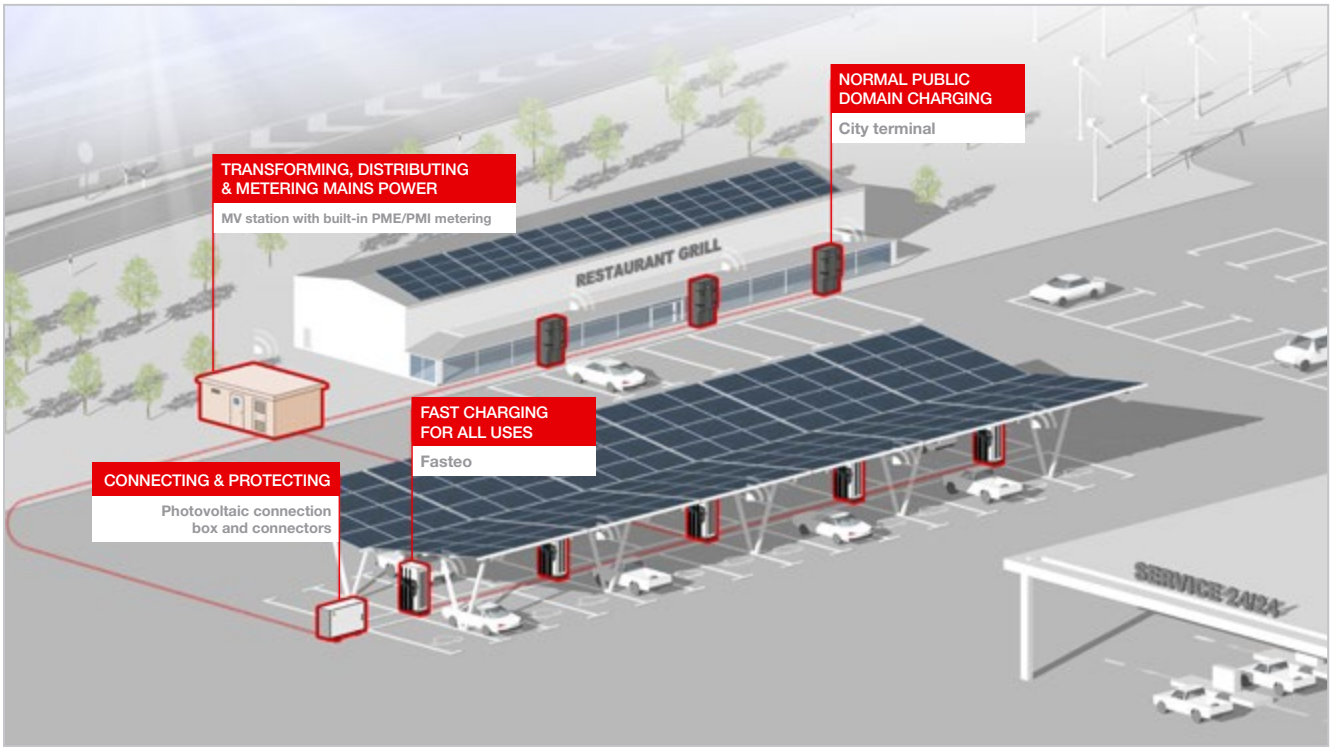
> MULTIMODAL STATION



> URBAN STATION



> ELECTRICAL SERVICE STATION



From normal charging to fast charging!

Use:
Indoor / Outdoor




Range	PIXEO	ACCESS	CITY	BOXEO	FASTEO
Charging current	AC	AC	AC	DC	DC + AC
Fast charging > 22 kW (- 30min)	-	-	-	✓	✓
Normal charging 3 to 22 kW (1 to 8h)	✓	✓	✓	-	✓
Public domain, local authorities	-	■■	■■■	-	■■■
Car sharing	-	-	■■■	-	-
3 Retail outlets Supermarkets Hypermarkets	□	■■	■■■	■■	■■
4 Parkings lots (public & private)	■■	■■■	■■	■■	□
5 Tertiary company	■■■	■■■	■■■	■■■	□
6 Service station Corridor	-	-	-	-	■■■
7 Collective / Residential	□	□	-	□	-
8 Electric bus	-	-	-	■■	■■■

Possible use □
Adapted use ■■
Optimum use ■■■

PIXEO units

RAL 7035

2 CHARGING POINTS / SHARED CHARGING

- Protections included*
- Installation: wall and base (option)
- Fitted with one T2S socket and one E/F socket (optional)
- Cluster configuration possible
- Advanced cluster energy management
- Low installation and connection costs
- Protection indexes: IP54 / IK10

* Circuit breaker + 30 mA differential per charging point

For use
Indoor and outdoor

Private domain open to public
- Retail outlets
- Relay park

Private domain
- Company parking lots and tertiary building
- Collective/residential housing

Options
- Free access or with badge-based identification
- Without cable attached / with T1 cable or T2 cable
- PH/OPH management possible with a clock
- E/F socket (RFID required)

Power	Socket type	Reference RAL 7035	Options acceptable	
			MID	Clock
3 kW	T2S	13S5500203	•	•
3 kW	T2S + TYPE E	13S5500163	•	•
7 kW	T2S	13S5500227	•	•
22 kW	T2S	13S5500205	-	•

Please call for other product configurations, supervised products and/or power management cluster

> ACCESSORIES more info p13

Designation	Reference
Wall mount	4095.554R13
Base	4094.668R13
Right cable rest	4094.718R13
Left cable rest	4094.719R13
Twisted cable T2/T1 3-7kW	4095.972R13
Twisted cable T2/T2 3-7kW	4095.083R13
Twisted cable T2/T2 22kW	4095.974R13
RFID badge	13S5500028
Terminal test device	13P2859082

ACCESS terminals

RAL 7024

2 CHARGING POINTS

- Protections included*
- Installation: ground anchoring
- Fitted with one T2S socket and one E/F socket (option)
- Cluster configuration possible
- Advanced cluster energy management
- Low installation and connection costs
- Protection indexes: IP54 / IK10
- OCPP 1.5 and 1.6

* Circuit breaker + 30 mA differential per charging

For use
Outdoor and indoor

Private domain open to public
- Retail outlets
- Relay park

Private domain
- Company parking lot
- Collective/residential housing

Options
- Customizable colour scheme
- Free access / badge or keypad identification
- PH/OPH management possible with a clock
- Integration of an MID energy meter possible
- GSM/ETHERNET connection (version with display)
- E/F socket (RFID required)
- Locking sockets for the Public domain

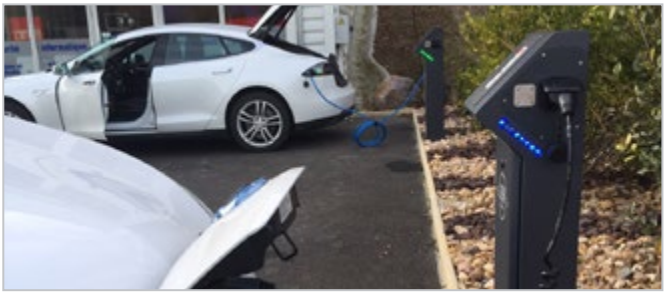
Power	Socket type	Reference RAL 7024	Comm/power management	Touch screen	Options acceptable	
					MID	Lightning
7kW	T2S+E/F	13P2851000	-	-	●	●
		13P2851001	●	●	●	●
	T2S	13P2851008	-	-	●	●
22kW	T2S+E/F	13P2851002	-	-	●	●
		13P2851003	●	●	●	●
	T2S	13P2851004	-	-	●	●

Please call for other product configurations, supervised products and/or power management cluster

> ACCESSORIES

more info p13

Designation	Reference
Twisted cable T2/T1 3-7kW	4095.972R13
Twisted cable T2/T2 3-7kW	4095.083R13
Twisted cable T2/T2 22kW	4095.974R13
RFID badge	13S5500028
Terminal test device	13P2859082



CITY terminals

RAL 7024

2 CHARGING POINTS

- Protections included*
- Installation: ground anchoring (candelabra block 200x200)
- Locking flaps to protect the sockets
- Fitted with one T2 and E/F socket
- Cluster configuration possible
- Advanced cluster energy management
- GSM/ETHERNET connection
- Protection indexes: IP54 / IK10
- OCPP 1.5 and 1.6

* Circuit breaker + 30 mA differential per charging point

Outdoor use

Public domain

- Local authorities / Towns / Metropolis
- Local Energy Department
- Car sharing

Options

- Customizable colour scheme
- PH/OPH management possible with a clock
- Integration of an MID energy meter possible
- Integration of the PDL possible (CIBE + metering board)
- Vehicle presence detection possible
- Up to 3 sockets can be integrated per CP

Power	Socket type	Reference RAL 7024	Power management comm.	Touch screen	Lightning arrester
7kW	T2+E/F	13P2854018	●	●	-
		13P2854055	●	●	●
	T2+T3+E/F	13P2854020	●	●	-
		13P2854056	●	●	●
22kW	T2+E/F	13P2854022	●	●	-
		13P2854057	●	●	●
	T2+T3+E/F	13P2854024	●	●	-
		13P2854058	●	●	●

Please call for product configurations other than those described in the first table or to add an option from the option table

> ADDITIONAL OPTIONS

Designation	Reference
Sheath positioning plate	13P2859001
CIBE PDL acc (CIBE+three kit+supp. CIBE)	13P2859000
PDL acc (without CIBE, without S80)	13P2859002
CIBE PDL acc + add.+three kit + S80	13P2859077
TB circuit breaker cable to terminal strip	13P2859003

> ACCESSORIES

more info p13

Designation	Reference
Twisted cable T2/T1 3-7kW	4095.972R13
Twisted cable T2/T2 3-7kW	4095.083R13
Twisted cable T2/T2 22kW	4095.974R13
RFID badge	13S5500028
Terminal test device	13P2859082

BOXEO units

25 kW DC CHARGING POINT

- Fast vehicle charging (150 km in 1H)
- Wall or base mounted installation
- Compact and light product (47 kg)
- Low installation and connection costs
- Easy use and operation
- Operating temperature: -30°C to +50°C
- Integrated cables
- Protection indexes: IP55 / IK08

ADVENIR

RAL 9022

For use
Indoor and outdoor

Private domain open to public
- Retail outlets
- Relay park

Private domain
- Company parking lot
- Collective/residential housing

Options
- Possibility of having 2 plugs: Combo2 + CHAdeMO
- Power and charging time control
- Fastening base
- Cable length: 4m (standard)
  7m (option)

Power	Socket type	Reference RAL 9022	Comm/power management
25kW	Combo2	13P2850100	•
	Combo2 + CHAdeMO	13P2850101	•

> ACCESSORIES more info p13

Designation	Reference
Fastening base	13P2850102


FASTEO terminals

ADVENIR

RAL 9003

4 IN 1 AC/DC ULTRA FAST CHARGER

NEW

- Simultaneously charging up to 4 cars
- Installation: ground anchoring
- Protection included and compact footprint
- Integrated dynamic power distribution (DPD)
- Multilingual 7''LCD display to guide the users
- GSM/ETHERNET connection
- Cables and sockets attached

- 4 charging points available per terminal:
  - 2 DC points: COMBO 2 connector and cable (max 100 kW)
    CHADEMO connector and cable (max 60 kW)
  - 2 AC points: Type 2 connector and cable (max 43 kW)
    Type 2 connector (max 22 kW)
- Charges all electric vehicles
- Protection indexes: IP55 / IK10

Outdoor use

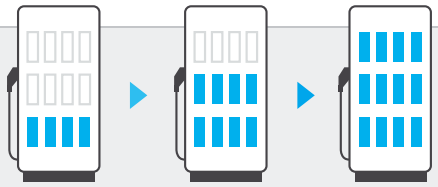
Public domain
- Local authorities / Towns / Metropolis
- Road system and rest area
- Fast charging stations

Private domain
- Companies, logistic centres
- Shopping centres...

Options
- Customizable colour scheme
- Free access or badge or keypad identification
- Emergency stop button
- Customizable socket combination (Combo/Combo)
- Combo cable 2400 A, i.e. 150 kW (for 10 mn)
- Cable length: 4m (standard) - 5.5m (option)

Fast charging
50 kW charge: 300 km in 1h
100 kW charge: 600 km in 1h

Terminal upgradeable by adding power modules (12,5 kW)



Modular scalability to charge next generation cars

Power	Socket type	Reference RAL 9003	Comm/power management
50 kW 4 in 1	Chademo/Combo/43 kW AC/22kW AC	13P2850060	•
100 kW 4 in 1	Chademo/Combo/43 kW AC/22kW AC	13P2850061	•
150 kW 4 in 1	Chademo/Combo/43 kW AC/22kW AC	13P2850062	•
50 kW 3 in 1	Chademo/Combo/43 kW AC	13P2850050	•
100 kW 3 in 1	Chademo/Combo/43 kW AC	13P2850051	•
150 kW 3 in 1	Chademo/Combo/43 kW AC	13P2850052	•
Power module 12.5 kW		13P2859087	-

Please call for other configurations.

Accessories

CONNECTION, TESTING, AND IDENTIFICATION

Twisted cable
T2/T1 3-7kW
Ref. 4095.972R13

Twisted cable
T2/T2 3-7kW
Ref. 4095.083R13

Twisted cable
T2/T2 22kW
Ref. 4095.974R13

Terminal test device
Ref. 13P2859082

This device is the indispensable tool to test and check electric vehicle charging terminals. Whether self-standing or connected to an installation controller, check the charging terminal's critical security devices, and emulate an electric vehicle.

Fitted with the type 2 standardized connector, it adapts to all electric vehicle charging terminals **in the AC range (mode 3).**

Badge RFID
Ref. 13S5500028

A customized solution for every need!

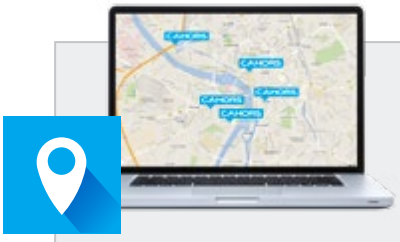
Networked or independent operation

Integration of the point of delivery

Up to 36 kVA (blue tarif)

Type of plug

- CHAdeMO
- Combo 2
- Type 2
- E/F (domestic)



Supervisable

- Terminal base management and maintenance
- Compatible with operator supervision
- OCCP 1.5 and 1.6

Communication

Geolocalisation, interoperability and charging terminal booking.

Access control

- Plug and charge
- By RFID badge

Design/Customization

Customized terminal design: housing, colour, logo, display, etc.

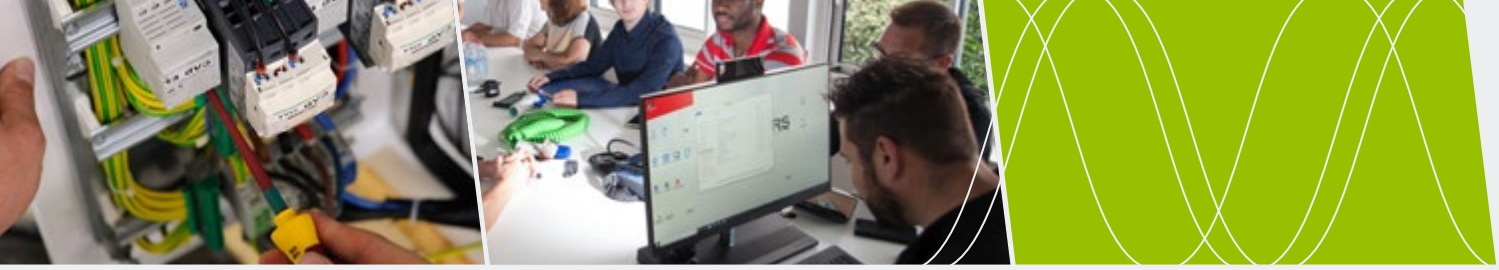
Power

from 3 kW to 150 kW.

Vehicles and charging

INTERPRETATION OF IEC 61851-1 & IEC 62196-2 STANDARDS

Charging time for 100 km	Normal charging ≤ 22 kW			Fast charging > 22 kW		
	4 to 8 hours		1 to 2 hours	10 to 30 minutes (> 80%)		
Charging power	3,7 kW - 16 A or 7,4 kW - 32 A Single phase AC		22 kW AC - 32 A Three phase AC	43 kW AC - 63 A Three phase AC 100 kW DC - 250 A DC (max)		
Vehicle side interface socket (male)	Type 1 	Type 2 	Type 2 	AC Type 2  43 kW	Chademo  60 kW DC CHAdeMO	Combo  100 kW DC Combo 2
Infrastructure side interface plug or attached lead (female)	E/F  8 A (or 10 A)	Type2  Lead attached to the Type 1 terminal 	Lead attached to the Type 2 terminal 	 Lead attached to the terminal	 Lead attached to the terminal	 Lead attached to the terminal
Position of the plug 	AC Type 1		AC Type 2		CHAdeMO	Combo CCS
	1 Kia Soul (6,6 kW) Nissan e-NV200 (3,7-7,4 kW) Nissan Leaf (3,7-7,4 kW) 2 Chevrolet Volt (3,7 kW) Ford Focus (7,4 kW) 4 Bolloré BlueCar (3,7 kW) Citroën C-zéro (3,7 kW) Citroën E-Méhari (3,7 kW) Mitsubishi iMiev (3,7 kW) Mitsubishi Outlander (7,4 kW) Peugeot iOn (3,7 kW) Toyota Prius (3,7 kW) 5 Citroën Berlingo (3,7 kW) Peugeot Partner (3,7 kW)		1 Audi A3 (3,7 kW) Audi Q7 e-tron (3,7 kW) Nissan Leaf version 2018 (7,4 kW) Renault Zoé (22 and 43 kW) Renault Kangoo (3,7 kW) Volkswagen (VHR) : Golf GTE et Passat (7,4 kW) 2 BMW X5 and i8 (3,7 kW) Opel Ampera (3,7 kW) Jaguar I Pace (7,4 kW) Volvo V60 (3,7 kW) Volvo XC90 (3,7 kW) 3 Tesla Model S and X (11 ou 22 kW) Smart (3,7 kW ; option 22 kW) Mercedes classe B (3,7 kW) Hyundaï IONIQ (7,4 kW) Porsche Panamera (3,7 kW) Porsche Cayenne (3,7 kW) Porsche 918 Spyder (3,7 kW) 4 Volkswagen (VE) : e Golf GTE and e-up (7 kW) Mercedes S and C classe (3,7 kW) BMW i3 (3,7 and 7,4 kW)		1 Kia Soul EV (100 kW) Nissan Leaf (50 kW) Nissan e-NV200 (50 kW) 3 Mitsubishi i-Miev (50 kW) Citroën C-Zéro (50 kW) Citroën Berlingo (50 kW) Peugeot iOn (50 kW) Peugeot Partner (50 kW) Tesla Model S and X with adapt. (50 kW) 4 Mitsubishi Outlander (50 kW)	2 Jaguar I Pace (100 kW) 3 Hyundaï IONIQ (70 kW) 4 Volkswagen eGolf and e-Up (50 kW) BMW i3 (50 kW)



CAHORS services offer

> SUPPORT AND MAINTENANCE SERVICES

START-UP, MAINTENANCE CONTRACTS AND CUSTOMIZED TECHNICAL SERVICES

CAHORS offers two types of service for its EVSE (Electric Vehicle Supply Equipment) product range:

1. punctual responses to technical issues related to start-up, preventive or corrective maintenance, installed base upgrade (including hardware and software retrofit). Services based on a quote.

2. preventive and/or corrective maintenance contract offers, including different levels of performance options and obligations based on the availability of your installed base, including warranty extensions.

> Our skills at the service of your specific problems, tailor-made:

- Start-up, start-up support,
- Corrective maintenance intervention levels 1 to 5
- Log analysis - Remote trouble shooting
- Single preventive maintenance operation
- Support and engineering: Installed base audit – retrofit...

> Maintenance contracts

The range of preventive maintenance contracts may include options such as software updates, hardware upgrades, and warranty extensions.
Our corrective maintenance contracts are customizable according to the levels of skills mobilized (1 to 5), intervention times expected, and geographical zones to be covered.

> Equipment under warranty

CAHORS customers are supported throughout the warranty period, in compliance with the terms described in the general documentation.

Ensuring continuity of service and durability of Medium Voltage installations are priorities for CAHORS. To meet these goals, the 'CAHORS SERVICES' unit handles the following for you:

- **Diagnostic of your installations and equipment,**
- **Writing up a maintenance plan**
- **Corrective or preventive manufacturer maintenance up to level 5,**
- **Handling of installation malfunctions and troubleshooting electrical equipment,**
- **Personnel training to guarantee autonomy for Level 1 and 2 maintenance,**
- **Availability of spare parts at all times,**
- **Recycling at end of life.**

EVSE aftersales
Tel. **05 65 35 72 11**
sav-irve@groupe-cahors.com

CAHORS SERVICES is the partner of your electrical installations and supports you throughout their life cycle.
N° INDIGO : **0 820 205 107** 0,09 TTC/MN
24 / 24 7 / 7
cahors.services@groupe-cahors.com

> TRAINING

CAHORS now offers 3 training levels as set out by decree EVSE 2017-26:

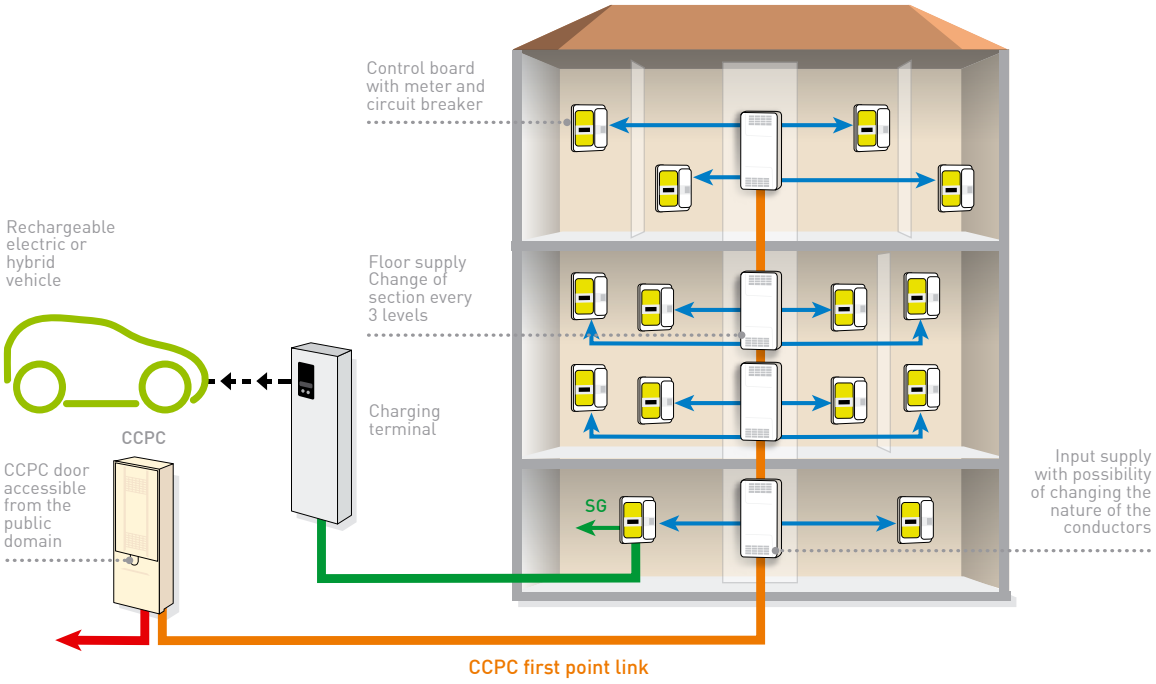
> EVSE - Basic training (level 1): covers the installation of charging terminals, without specific configuration for communication or supervision.

> EVSE - Expert training (level 2): covers the installation of charging terminals up to 22kVA, with configuration for communicating terminals and station supervision.

> EVSE - Fast recharging (level 3): covers the installation of fast charging terminals > 22kVA.

IFGC also offers technical product and maintenance training on the entire CAHORS EVSE range (up to 65% practice*)

** Prerequisites: BR level electrical accreditation - Basic electrical and electrotechnical knowledge. General operation of measurement devices.*

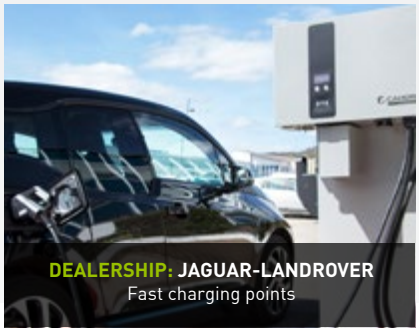


IFGC SA
Training organisation N° 73310391031
Tel : 05 65 35 82 37
Email : ifgc.formation@groupe-cahors.com
www.groupe-cahors.com


Examples of projects

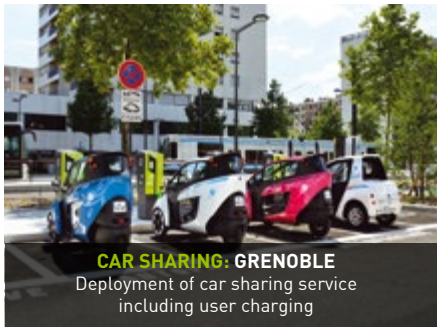
ELECTRIC CORRI-DOOR: SODETREL
Deployment of fast charging terminals

COMPANY FLEET
Fast charging points
for company vehicles



DEALERSHIP: JAGUAR-LANDROVER
Fast charging points

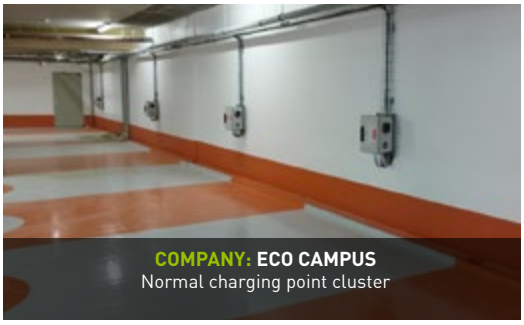
ELECTRIC CORRI-DOOR: RHÔNE VALLEY
Deployment of stations comprising
2 fast charging terminals



CAR SHARING: GRENOBLE
Deployment of car sharing service
including user charging

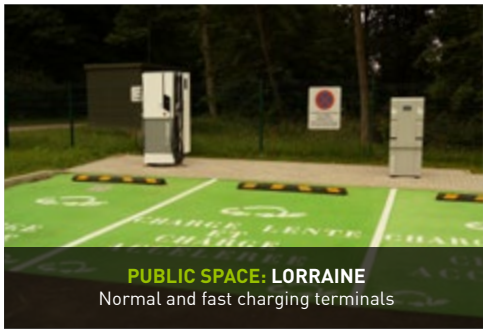
COMPANY FLEET
Normal charging point
for the EDF vehicle fleet

CAR SHARING: LYON
Déploiement d'une station d'autopartage
avec bornes de charge normale

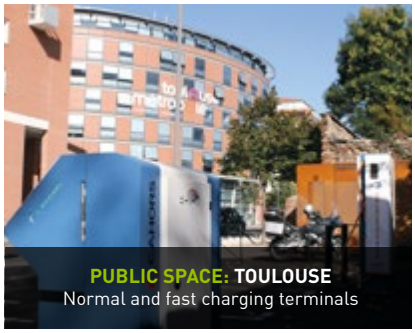


COMPANY: ECO CAMPUS
Normal charging point cluster

PUBLIC DOMAIN: ALSACE
Normal charging terminals



PUBLIC SPACE: LORRAINE
Normal and fast charging terminals



PUBLIC SPACE: TOULOUSE
Normal and fast charging terminals

LOCAL AUTHORITIES: OCCITANIE
Normal charging terminals
Révéo market

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CAHORS
E-MOBILITY

afaq ISO 9001 Qualité AFNOR CERTIFICATION
afaq ISO 14001 Environnement AFNOR CERTIFICATION
afaq OHSAS 18001 Santé Sécurité au Travail AFNOR CERTIFICATION
afaq ISO 50001 Énergie AFNOR CERTIFICATION

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