INSTALLATION INSTRUCTIONS

PULSE 22 GL

AC CHARGING TERMINAL (3 – 22KW)

Reference document – 17800071-D3 10/2022

CONTENTS

GENERAL

Warnings

The information contained in this document may be modified without notice. Consequently, the photos contained herein are non-contractual. They may not necessarily show the model that you own. However, any differences are sufficiently small for them to illustrate the different points.

Purpose

This document describes the procedures and contains the recommendations required to:

- install
- commission
- operate
- and conduct preventive maintenance and repairs.

Applicable standards

This equipment for charging electric vehicles complies with the following directives and standards:

- NF EN 61851-1:2012 Système de charge conductive pour véhicules électriques (*Electric vehicle conductive charging system*).
- NF EN 61851-22:2002 Système de charge conductive pour véhicules électriques - Partie 22: Borne de charge conductive en courant alternatif pour véhicules électriques (*Electric vehicle conductive charging system. A.C. electric vehicle charging station.)*
- NF C15-100 Sécurité des installations électriques (French electrical installation safety standard)
- CE certification

Its installation must comply with:

- NF C15-100, installations électriques (French electrical installation safety standard)

Storage conditions

The following storage conditions should be complied with:

- Storage temperature range: +10°C to +30°C,
- Relative humidity range: < 60 % RH,

By precaution, the equipment should be protected from heat and humidity prior to any installation.

A charging station installed on site and powered off may collect an important quantity of internal condensation. It is mandatory to keep the station powered on permanently, MADIC industries declines any responsibility in case of damage due to the non-respect of this requirement.

Documents included

The following documents are dispatched from the factory with the terminal:

- This technical manual
- A wiring diagram

Warnings and precautions

Waste electrical and electronic equipment (WEEE)

In accordance with French Decree 2005-829 of July 20th 2005 related to the composition of electrical and electronic equipment and the disposal of waste from them, the following points must be taken into account:

For equipment not covered by the aforementioned Decree and as required by French environmental law, it is up to the WEEE's owner to ensure its disposal or have it disposed of.

For equipment covered by the aforementioned Decree, article 18 specifies the obligations related to organising, paying for WEEE removal and disposal as:

- Purchaser is responsible for products are manufactured under its brand or for components or sub-assemblies that are intended to be assembled by purchaser to create a finished product intended for sale.

- In all other cases, liability is wholly transferred to Purchaser who specifically accepts responsibility for all obligations without having any right to make a claim on Vendor. In this respect, Purchaser agrees to ensure that the EEE that are sold are collected, treated and recycled in accordance with applicable regulations and with any information provided by Vendor as specified in articles 20 and 21 of the aforementioned Decree.

Purchaser agrees to transmit the above WEEE obligations to its own clients who should in turn, when not the end user, transmit them to their successive clients through to the end user. Purchaser is liable to Vendor for ensuring that the successive purchasers comply with the WEEE obligations relating to organising, paying for WEEE removal and disposal or recycling irrespective of whether the obligations have been transmitted to third parties.

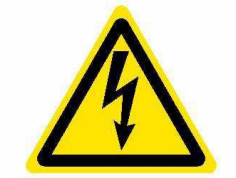
In the event that Purchaser breaches this requirement, such as a failure by the end user, Purchaser warrants Vendor against any consequences that may arise from third party or government claims and from any harm that Vendor may suffer.

Purchaser will pay any penal fines under article 25 of the aforementioned Decree and any civil damages determined against the Vendor. Generally, Purchaser will compensate Vendor for any losses caused by its failure or those of the end user.

SAFETY RECOMMENDATIONS

Electrical safety

- Installation, commissioning and maintenance must be carried out by someone who is aware of the risks involved and who has a level B1, B2 or BC electrician certificate in accordance with the UTE C18-510 standard. All work with the power connected must be done by someone who has a level B1T, B2T or BC electrician certificate in accordance with the UTE C18-510 standard.



- The person must be trained in installing this type of equipment and must comply with all the precautions specified herein and those related to installing electrical equipment.

- The electrical connection must comply with the NF C 15-100 standard.

- The general circuit breaker for the terminal must be locked in the off position before any intervention on the electrical equipment.

Tool and personal protective equipment inventory

Personal protective equipment (PPE)

- Hard hat, anti-electrical spark face guard and anti-electrical arc gloves.

Standard tools

- Several sizes of box spanners 
- Several sizes of flat spanners 
- Several sizes/types of screwdrivers and/or keys

  Slot • Phillips • Pozidriv

  Torx Six sided (Allen)  Hollow six sided + Nipple (BTR or HC)

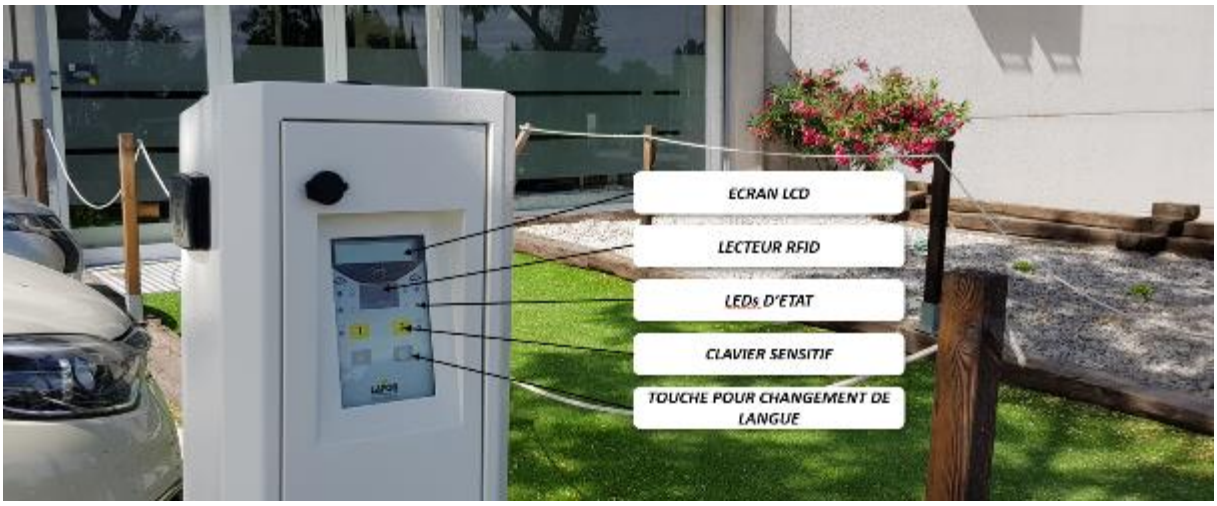
Definition of responsibilities

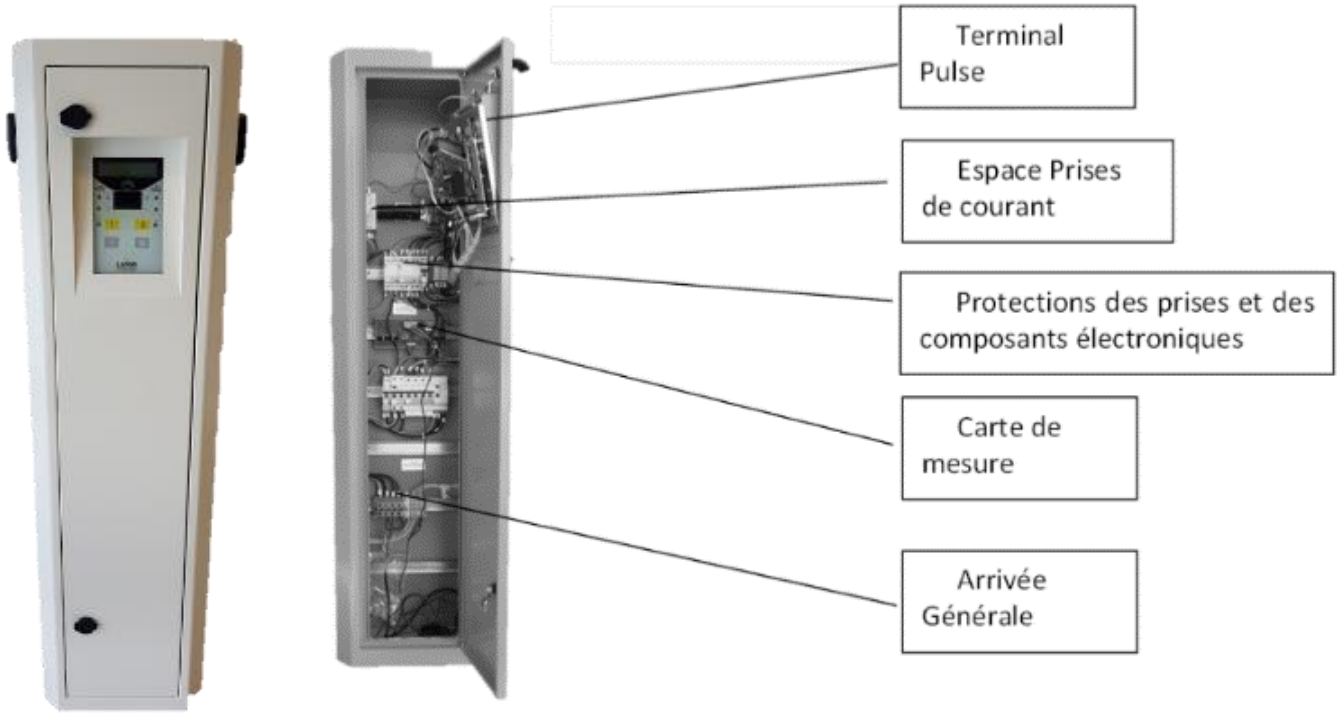
The equipment must be installed, used and maintained in accordance with the instructions contained herein. When necessary, some installation stages are numbered and must be done in the indicated order.

Installers, project managers, owners and operators must comply with all precautions, warnings and recommendations contained herein.

If this is not the case, MADIC industries does not guarantee that the equipment will work correctly and the equipment's guarantee becomes invalid.

TECHNICAL DESCRIPTION





The VE PULSE 22 charging terminal is fitted with 1 to 4 sockets and can charge two vehicles simultaneously. Each charging point can charge one electric vehicle in mode 1, two on a household socket or three using a Type 2S socket (standard on electric vehicles).

Equipment description

Human interface

MADIC industries PULSE CPU management card with:

- 2 line LCD display screen,
- 2 touch sensitive areas,
- 6 high luminosity LEDs.

IDENTIFICATION/ AUTHORISATION

- RFID contactless badge reader meeting ISO14443A and 14443B protocls
- Barcode, QR code reader (optional)

SOCKETS

Access to the sockets is controlled by a door that protects each charging point and houses the removable cable.

- 1 or 2 Type 2S sockets (standard on electric vehicles)
- 1 or 2 Type E/F sockets (household connection).

COMPONENTS

- 1 x 40A on/off switch per charging point
- 1 x 16A circuit breaker for the E/F socket per side (depending on configuration)
- 1 x 40A/30mA differential circuit breaker for the T2 and T3 sockets per side (depending on configuration)
- 1 x 10A circuit breaker for the 24V DC power supply
- Lightning protector (optional)

POWER SUPPLY

- Three phase terminal power supply (3 phases, neutral and earth).
- 24V / 60W DC power supply.
- Position for the integrated delivery point (optional)

COMMUNICATION / SUPERVISION OPTIONS

- ROUTER OPTION

- Ethernet link OPTION
- Hosting on CHARGE PULSE server OPTION (www.chargepulse.com)

CASING

- Aluminium
- Painted using client RAL upon request

Electrical characteristics

It is important to comply with the safety instructions contained herein.

The systems electrical connections should only be made by a qualified electrician.

The terminal must receive its power supply via a single cable with dimensions that comply with the NFC 15-100 standard for the power allocated to the terminal.

A tetrapolar (D curve) thermal magnetic circuit breaker should be installed upstream. This circuit breaker must be clearly identified to ensure that no error is possible when locking it in the off position.

The power supply cable should have dimensions that comply with the NFC 15-100 standard for the distance from the low tension electrical fuse box to the terminal.

The electrical connections are made using connector terminals located at the bottom of the charging terminal.

Main power supply

The charging terminal is connected to the electrical mains in accordance with the following recommendations: This operation must be done by an approved operator.

A good electrical power supply is essential for the terminal to operate correctly because some electric vehicles are very sensitive to harmonics present in the grid. The power supply must comply with the NF EN 50160 and NF EN 50160/A1 standards.

	PULSE 2 x 7 kW	PULSE 2 x 22 kW
Connector type	**P+N+E**	**3P+N+E**
Voltage (nominal)	**230V AC**	**400V AC**
Current (maximum)	**32A**	**64A**

Cable example: U1000RO2V 5G25

Recommended minimum currents are:

- **Single phase charger with T2S socket: 64 A (2 x 32 A) → charger (2x7 kW)**
- **Three phase charger with T2S socket: 64 A by phase (2 x 32 A) → charger (2x22 kW)**

Earthing connection

Earthing cable incorporated into power supply cable.

Connect to main earthing spigot under the base. The equipment must be connected to the site's main earthing connection. Good earthing is essential to ensure that some electric vehicles can be charged: the earth resistance must be less than 150 Ohms for the equipment to operate correctly.

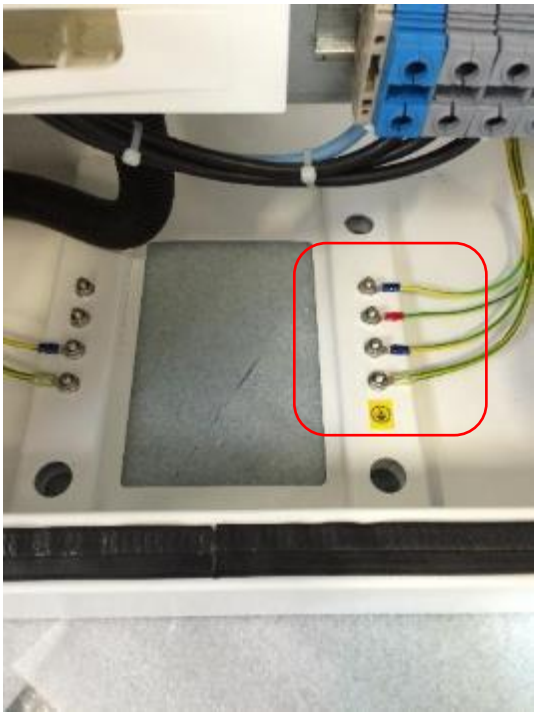
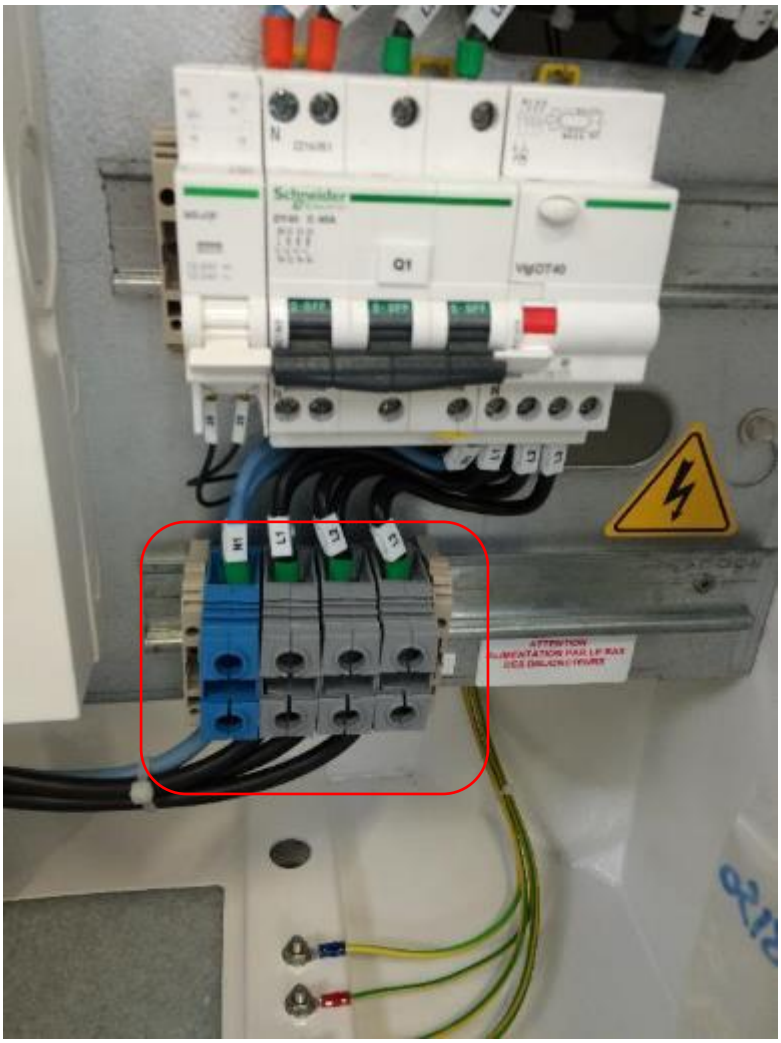


Figure 1. Connecting the main earthing cable to the earthing spigot under the base.

Connecting the terminal without an integrated delivery point

On dedicated connectors for cable diameters from 1.5 to 35 mm².



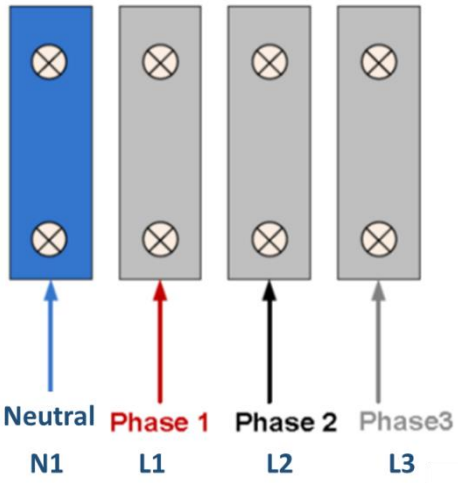


Figure 1. Connecting the power supply within the terminal

The project manager and the installer are responsible for ensuring that the earth on the main spigot is connected to the main earth in the fuse box using state of the art techniques and in compliance with the applicable regulations.

The connection to the electrical mains should be between its delivery point and the main connectors located in the electrical charging terminal.

Connect to a simple connection termianal using at least a 5 x 10 mm² cable.

The connection between the electrical mains delivery point and the charging terminal connectors must be done:

- in accordance with the state of the art for a class I type of insulation,
- using type U1000RO2V power cables,
- using cables with appropriate diameters and lengths to avoid any heating,

in a way that protects the power cables from high temperatures, humidity, grease, penetrating or thermal shocks.

The power cable from the electrical mains delivery point must pass through the terminal's cable entry and its connection terminals.

Check that the equipment's voltage is compatible with the mains voltage.

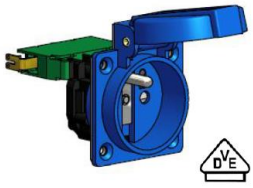
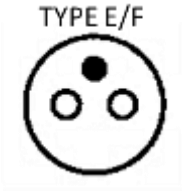
Connecting in a terminal with an integrated delivery point

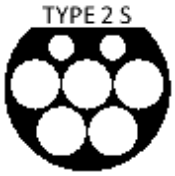
The connection is made in the individual junction box (IJB). A place is set aside in the terminal to house this junction box (not supplied).

Summary of terminal wiring

See the wiring diagram supplied in the terminal.

Type of integrated socket

SOCKET	FORMAT	CHARACTERISTICS
		CEE 7/5 type E socket P+N+E 230V 16A

SOCKET	FORMAT	CHARACTERISTICS
		CEI 62196-2 type 2S socket with covers 3P+N+E 400V 32A

Environmental conditions

Thermal characteristics

Temperature: Operating temperature range for electrical characteristics to be maintained; -25°C to +50°C.

ENVIRONMENTAL SPECIFICATIONS	
Operational temperature range	-25°C to +50°C
Storage temperature range	+10 to +30°C
Humidity range	5% to 95% RH
IP protection (water and dust)	IP55
IK protection	IK10
Standards	Complies with following standards: **CEI 61851-1 :2012** **CEI 61851-22 :2002**

Wind: the terminal can tolerate wind speeds of 200 kph

Connection to the wireless mobile telecommunication network

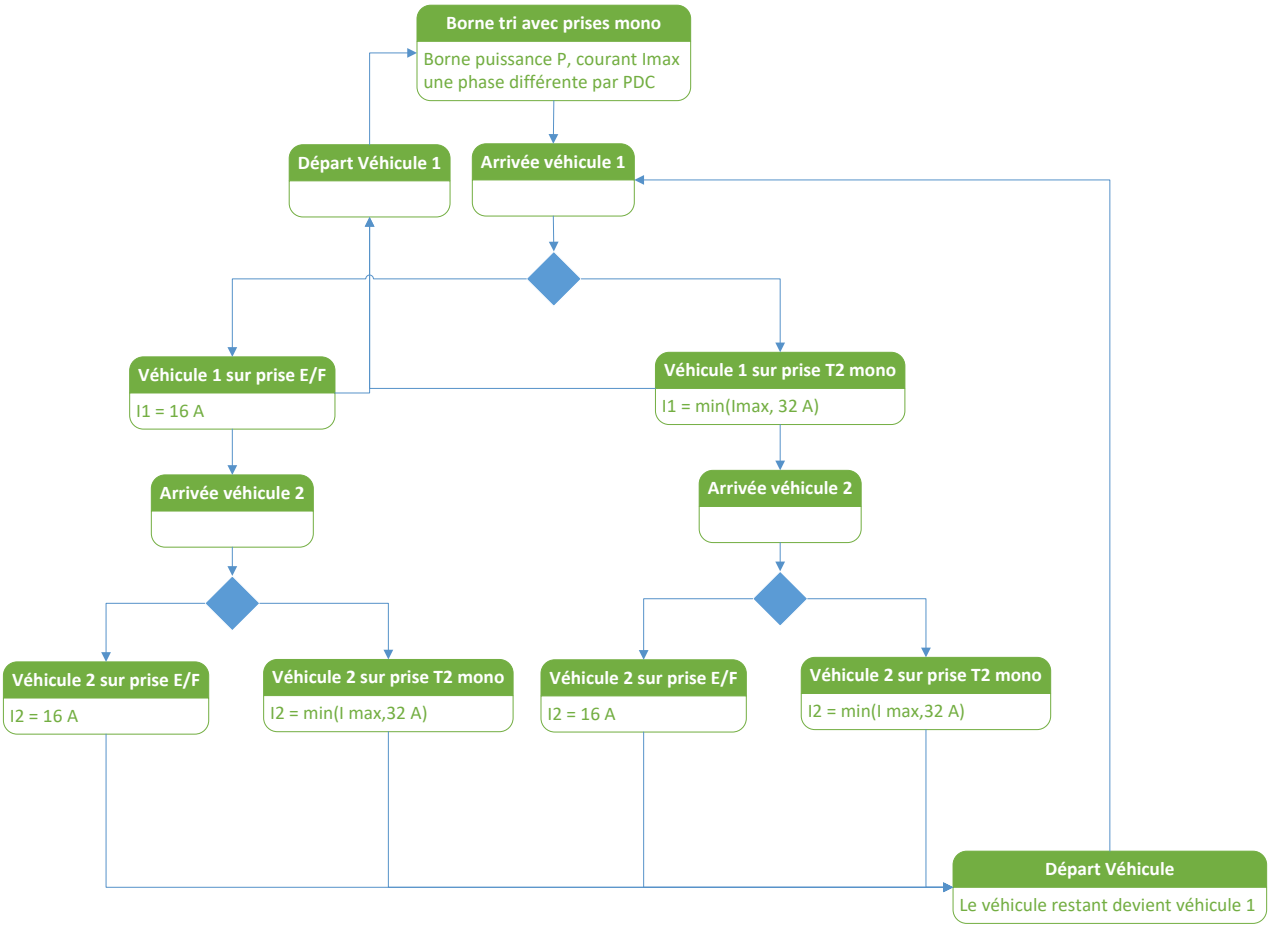
The charge may connect to a supervisor with a 2G/3G router. In this case, a SIM card (not included) from a mobile phone operator must be inserted in the charger.

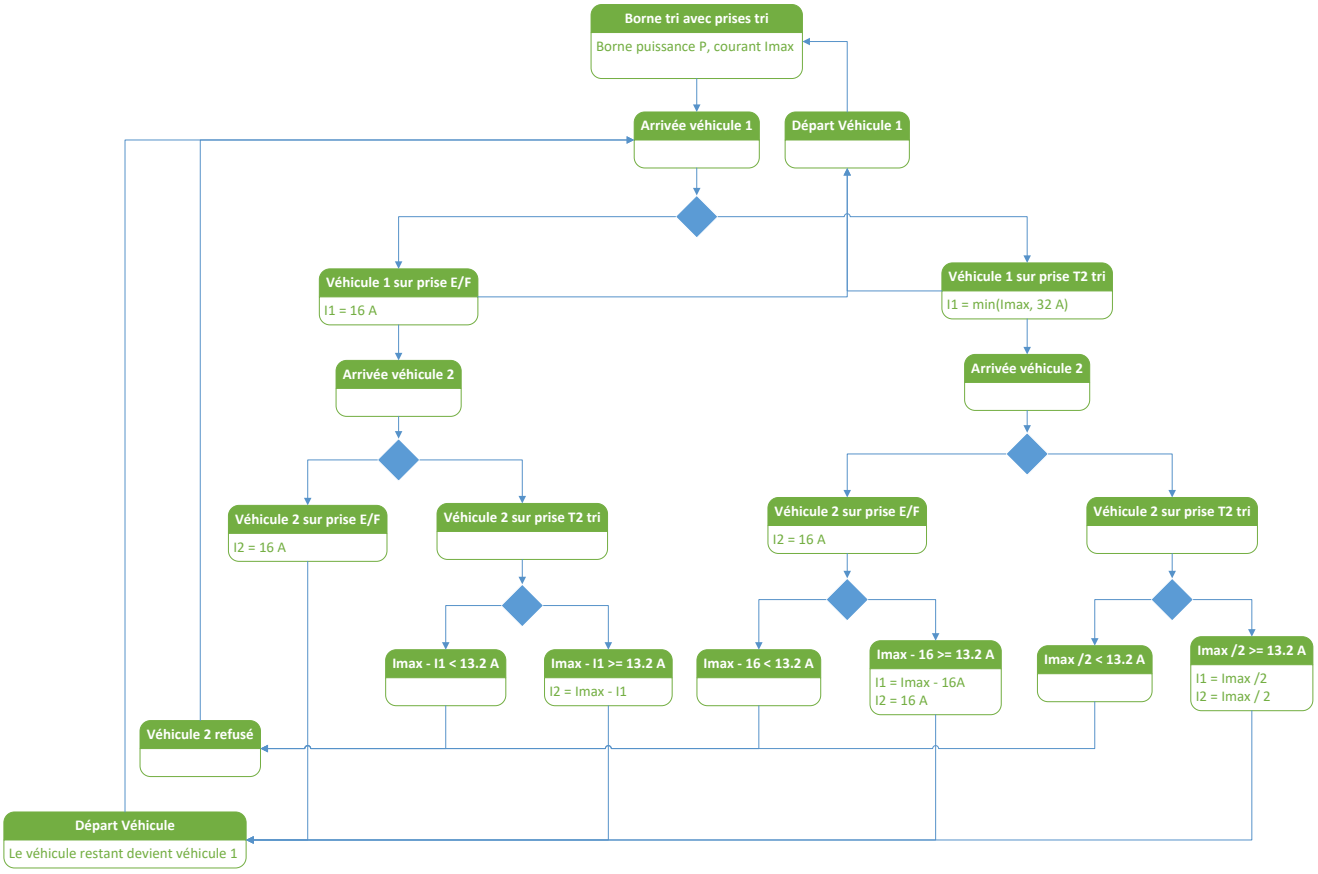
Minimum reception levels recommended are:

- **for 2G (GSM/GPRS/EDGE) : RSSI 16, i.e. -81 dBm**
- **for 3G (UMTS/HSPA/HSPA+) : RSSI 14, i.e. -85 dBm**

Dynamic power distribution

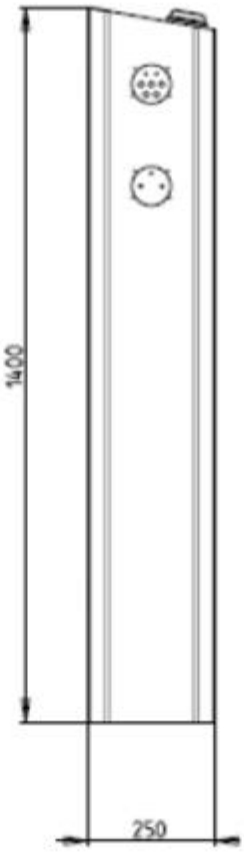
The total power is split between the two charge points depending on the number of vehicles. **As ZEREADY rules forbid a charge session under 13.2 A three phases, le session may be rejected for the second vehicle if the total power of the station is too low.**

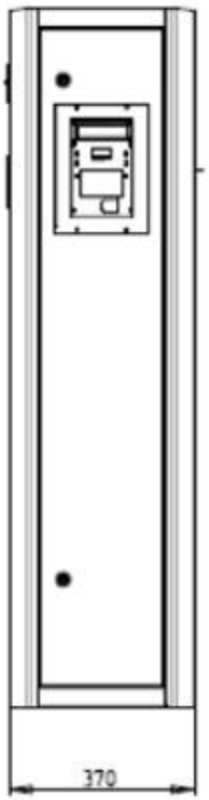

Borne tri avec prises mono
Borne puissance P, courant Imax une phase différente par PDC
Départ Véhicule 1
Arrivée véhicule 1
Véhicule 1 sur prise E/F
I1 = 16 A
Véhicule 1 sur prise T2 mono
I1 = min(Imax, 32 A)
Arrivée véhicule 2
Arrivée véhicule 2
Véhicule 2 sur prise E/F
I2 = 16 A
Véhicule 2 sur prise T2 mono
I2 = min(I max,32 A)
Véhicule 2 sur prise E/F
I2 = 16 A
Véhicule 2 sur prise T2 mono
I2 = min(I max,32 A)
Départ Véhicule
Le véhicule restant devient véhicule 1

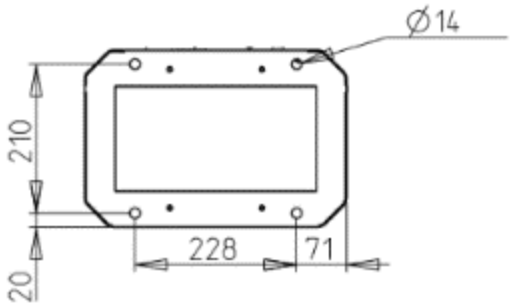

Borne tri avec prises tri
Borne puissance P, courant Imax
Arrivée véhicule 1
Départ Véhicule 1
Véhicule 1 sur prise E/F
I1 = 16 A
Véhicule 1 sur prise T2 tri
I1 = min(Imax, 32 A)
Arrivée véhicule 2
Arrivée véhicule 2
Véhicule 2 sur prise E/F
I2 = 16 A
Véhicule 2 sur prise T2 tri
Véhicule 2 sur prise E/F
I2 = 16 A
Véhicule 2 sur prise T2 tri
Imax - I1 < 13.2 A
Imax - I1 >= 13.2 A
I2 = Imax - I1
Imax - 16 < 13.2 A
Imax - 16 >= 13.2 A
I1 = Imax - 16A
I2 = 16 A
Imax /2 < 13.2 A
Imax /2 >= 13.2 A
I1 = Imax /2
I2 = Imax / 2
Véhicule 2 refusé
Départ Véhicule
Le véhicule restant devient véhicule 1

DIMENSIONS

CARROSSERIE PULSE G line







Weight: 30 kg

UNPACKING – INSTALLATION

The equipment is packed in cardboard packing that has been specifically designed to ensure maximum safety during transport.

However, if signs of a significant shock are observed (which normally leaves signs on the outside of the packaging), all reserves should be made with the driver and MADIC industries should be advised.

Two people are required to handle the Pulse terminal.

POSITIONING AND SEAL

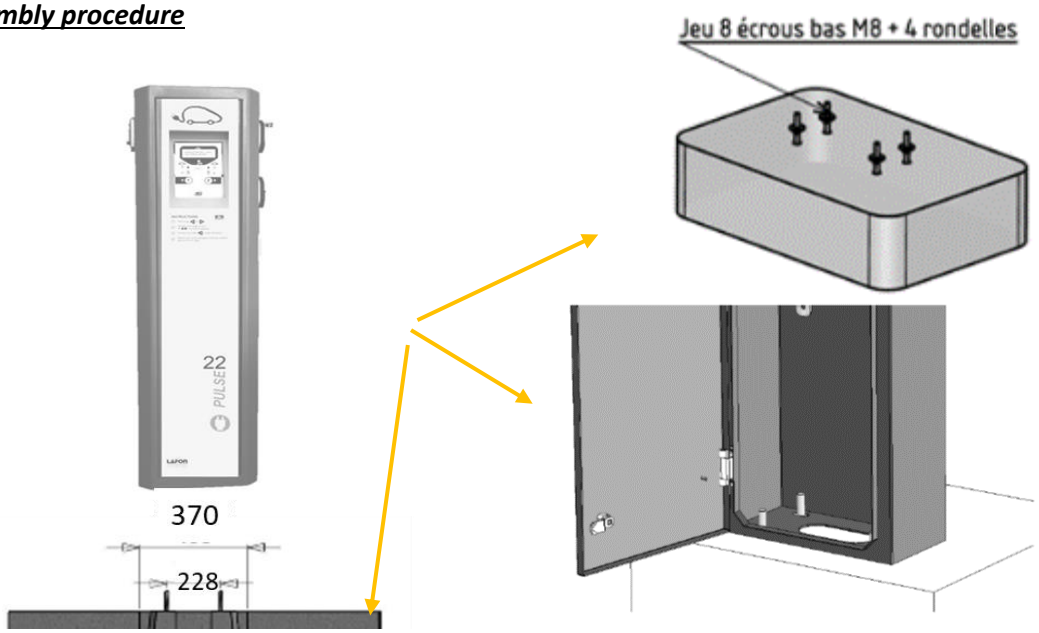
The Pulse terminal should be positioned so that it is protected from collisions with motor vehicles (concrete ridge or metal posts).

It should be located close enough to parking places to allow easy connection despite the often short cable lengths used.

The Pulse terminal should be fixed in accordance of local regulations.

- Slab density : B30, 350 kilo of cement/m3
- Flatness : 2mm/m
- Foundations frost-free
- chemical sealing for threaded rods is preferentially used
- the ground rod must be installed in accordance of local regulations

Assembly procedure

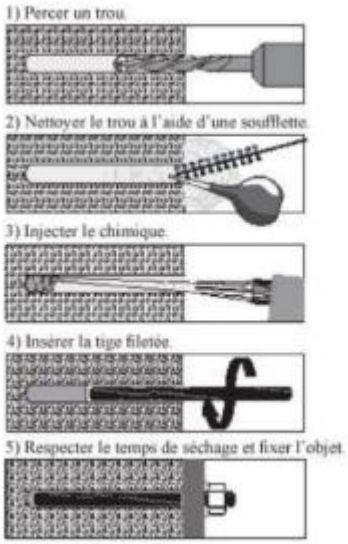


1. Place the terminal in position, mark the fixing points then fix the threaded rods in the ground. These should protrude minimum 45mm from the ground. You can also use a resin fixing.
   If you use a prefabricated concrete block (used for public lighting, as shown on the picture below), it's not necessary to reduce the length of the studs.

2. Lock the lock nuts.

3. Place the terminal in position and fix using 4 x M18 nuts and wide washers.

If Chimical seal



COMMISSIONING

Starting in the junction box

Turn all the switches in the terminal to their ON positions (depending on configuration)

Stopping in the junction box

Turn all the switches present to their 'OFF' positions.

The installer, operator or maintenance crew are responsible for:

- stopping all power supplies before any intervention as soon as it is necessary,
- not forgetting to reset all safety devices that protect individuals after the initial installation or conducting any electrical work on the equipment.
- turning off the site's upstream circuit breaker for any intervention upstream to the terminal's own main circuit breaker (i.e. for an intervention on the main connection terminals).
- never disconnecting the main earthing conductor (green/yellow)

Electrical devices are connected from below.

Interface

LCD FSTN display Transmissive and backlit 160 x 32 pixel LED

Two sockets share the LCD display

3 high luminosity multicoloured LEDs per socket:

- IDENTIFICATON indicator
- TIME indicator
- CHARGER STATUS indicator

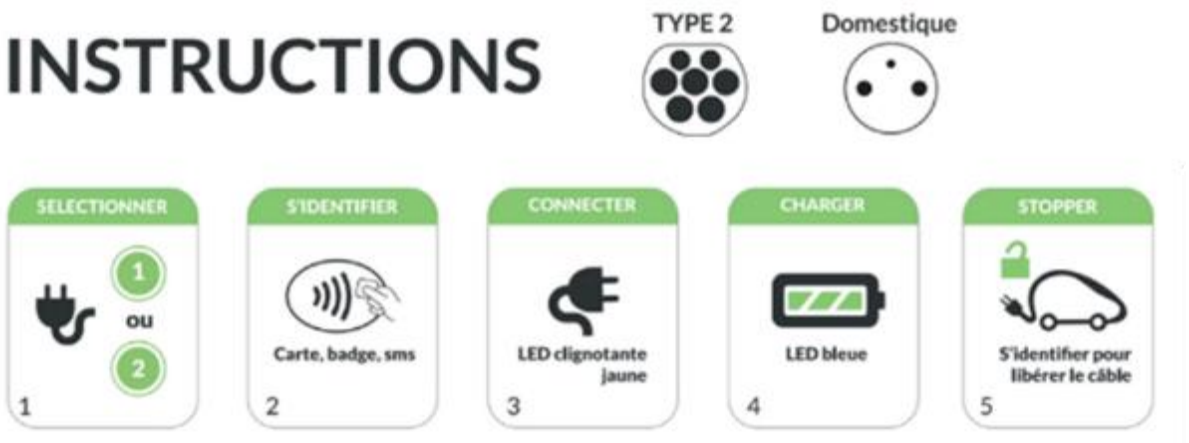
Fully readable from 5 metres in full sunlight

The barcode reader holder and window are integrated (optional)

Voice synthesiser loud speaker

Terminal

User instructions



LED indicators' meanings

The IDENTIFICATION LED indicates the driver's authorisation status:

GREEN	Driver authorised
Flashing GREEN	Driver identified and authorisation request being processed
YELLOW	Charging point reserved
Flashing YELLOW	Equipment working, awaiting identification or reservation
RED	Equipment not operational
Flashing RED	Driver refused: not identified or not authorised

The TIME LED shows the parking status and the equipment's operational status:

UNLIT	No power supply - not in service
GREEN	Charging point available
YELLOW	Network connection failure (in connected mode) offline mode
Flashing YELLOW	Awaiting identification, connection or disconnection
RED	Excessive parking (ParkSense) or charging completed more than 15 minutes ago

The CHARGING STATUS indicator shows the charging status:

UNLIT	Socket has no power supply
BLUE	Power on, charging is occurring
Flashing BLUE	Power on, no current flowing
Flashing MAGENTA	Mode 3 charging initialisation, awaiting vehicle
Flashing MAGENTA/BLUE	End of charging requested by vehicle
RED	Broken down or disconnected so not powered and not in service

CONFIGURATION

The terminal configuration depends on the model and the options that are fitted.

An initial configuration is done during testing in the factory before the equipment is shipped. It may be necessary to change this configuration during installation or maintenance to add options or make choices about use.

All changes to the configuration must be made by a suitably trained person . MADIC industries does not accept any responsibility for any event, breakage or destruction to the equipment or caused by the equipment following any third party changing the configuration.

Access

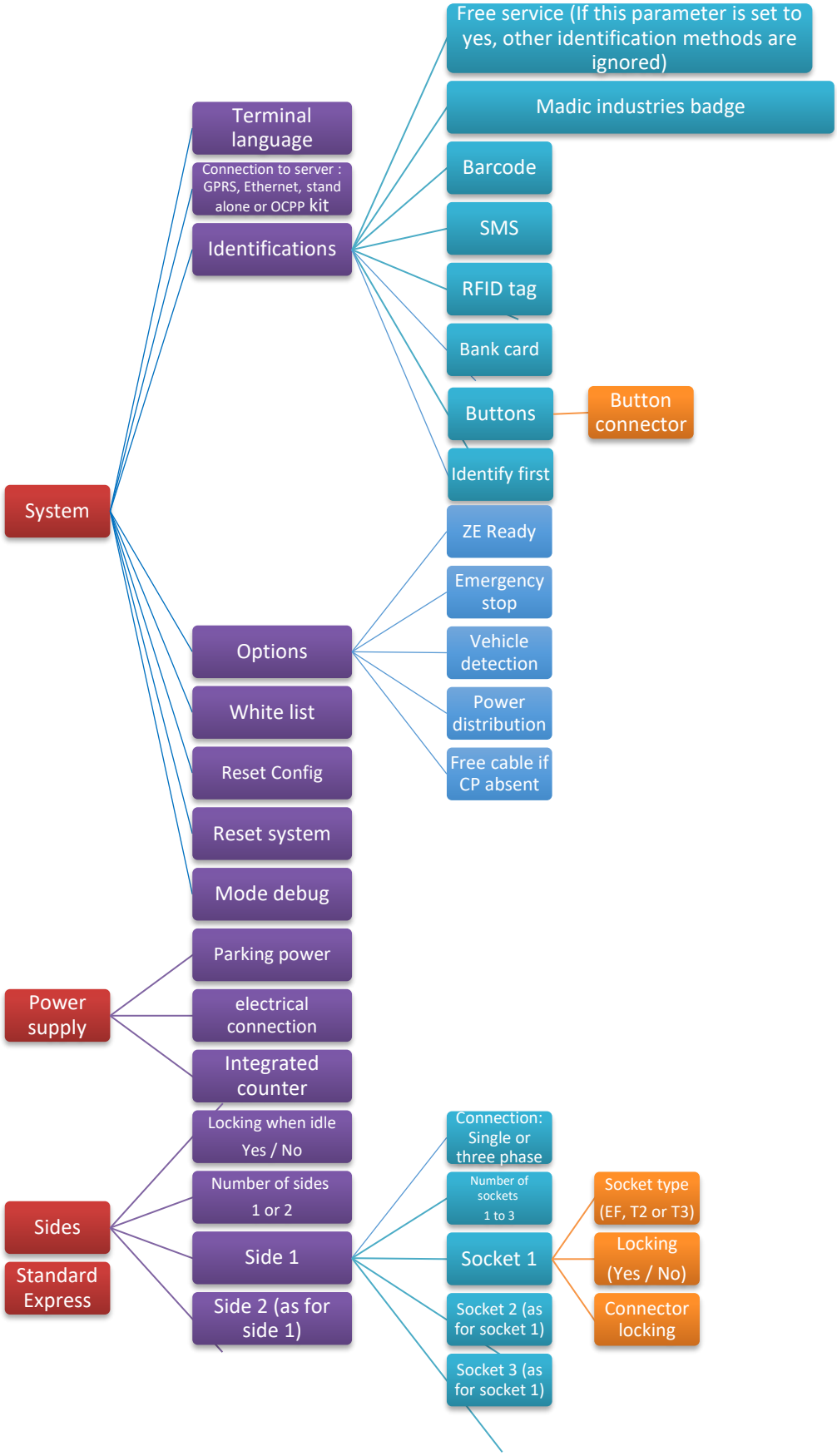
The CONFIG push button opens the configuration menu.

Main menu

The main menu offers four options that can be accessed via the numbered tactile area (area 3 and 4 are not delineated on the façade but are present below areas 1 and 2 as shown below):

1. Parameters: the list of all the parameters that can be modified individually
2. Unlocking badge: used to link a new unlocking badge
3. Diagnostic: menu used to display certain states and conduct tests
4. Exit / Reset

Parameters


System
Terminal language
Connection to server : GPRS, Ethernet, stand alone or OCPP kit
Identifications
Free service (If this parameter is set to yes, other identification methods are ignored)
Madic industries badge
Barcode
SMS
RFID tag
Bank card
Buttons
Button connector
Identify first
Options
ZE Ready
Emergency stop
Vehicle detection
Power distribution
Free cable if CP absent
White list
Reset Config
Reset system
Mode debug
Power supply
Parking power
electrical connection
Integrated counter
Sides
Standard Express
Locking when idle Yes / No
Number of sides 1 or 2
Side 1
Side 2 (as for side 1)
Connection: Single or three phase
Number of sockets 1 to 3
Socket 1
Socket 2 (as for socket 1)
Socket 3 (as for socket 1)
Socket type (EF, T2 or T3)
Locking (Yes / No)
Connector locking

Unlocking badge

This menu is used to link a badge and unlock the terminal.

Once the menu is opened, present the new badge to the terminal and it will linked.

A terminal can only be linked to one badge at any time.

NOTE: the unlocking badge can be modified by the server in connected mode.

Diagnostic

The diagnostic menu is used:

To conduct a full test of the terminal (production test). This requires that the equipment required for the test is available.

To conduct single tests on terminal functions: RFID, Barcode, Modem, Sockets, etc. For some tests this requires that the equipment required for the test is available.

Exit / Reset

This is used to exit a menu in order to return the equipment to operational service.

All changes to the configuration must be made by a suitably trained person . MADIC industries do not accept any responsibility for any event, breakage or destruction to the equipment or caused by the equipment following any third party changing the configuration.

2G/3G/4G CONNECTION

Pulse terminal uses two kinds of router :

Routeur F3426 (2G/3G)	Routeur F3X26Q (2G/3G/4G)
	

Inserting the SIM card

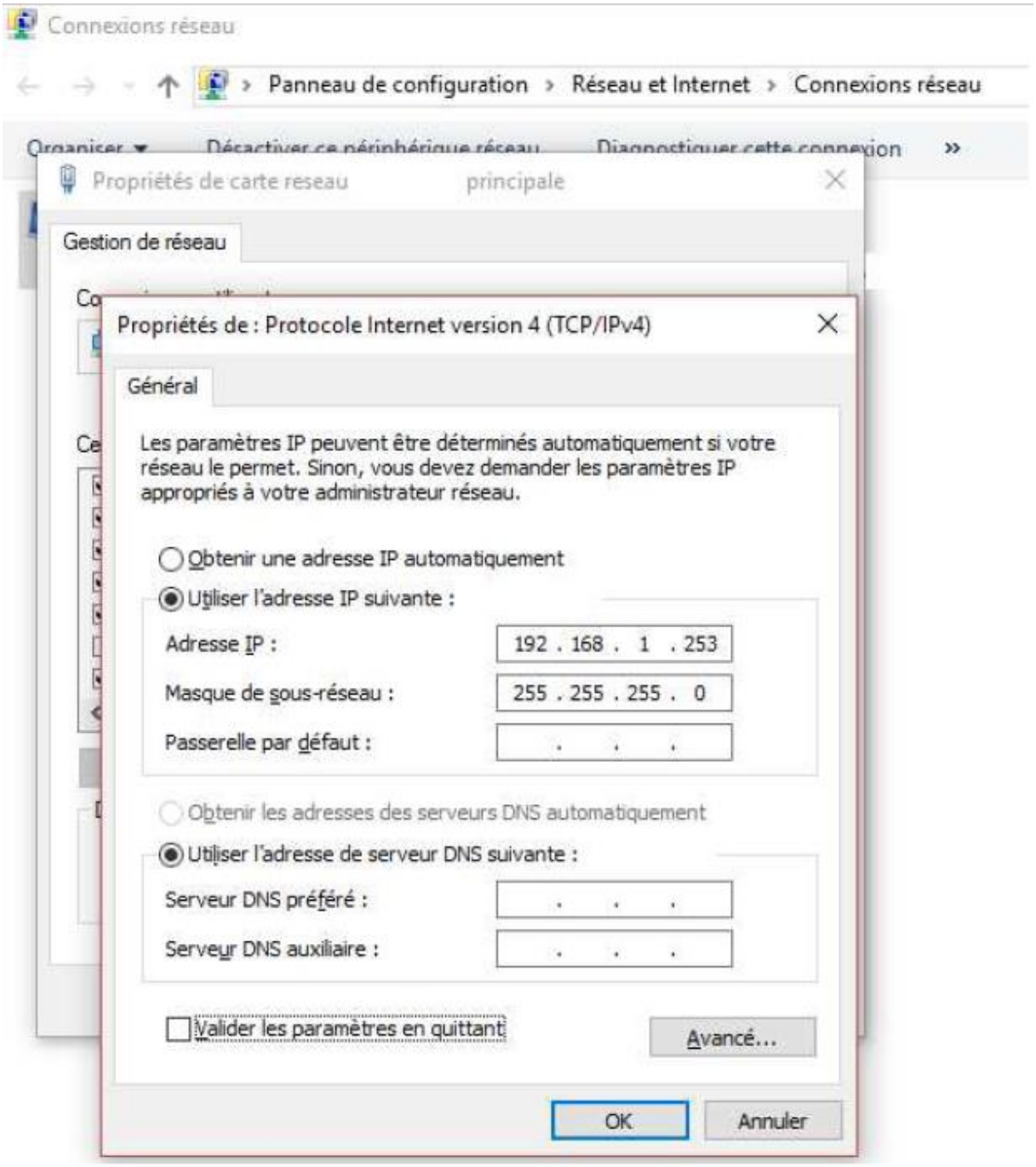
On the front plate of the router is the slot for the SIM card. If you need to change it, please press with a pen or a similar tool to eject the card.

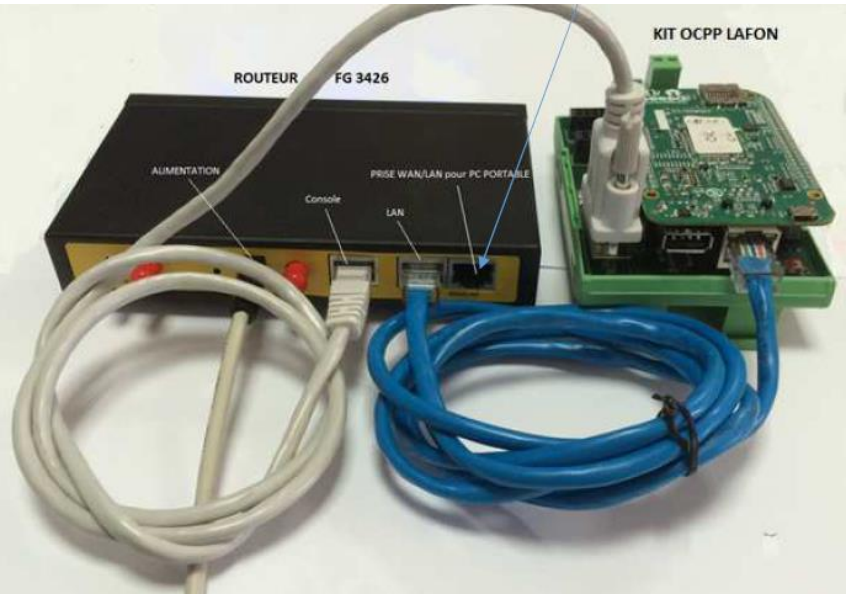
.

The chip of the SIM must face down.

Setting the router

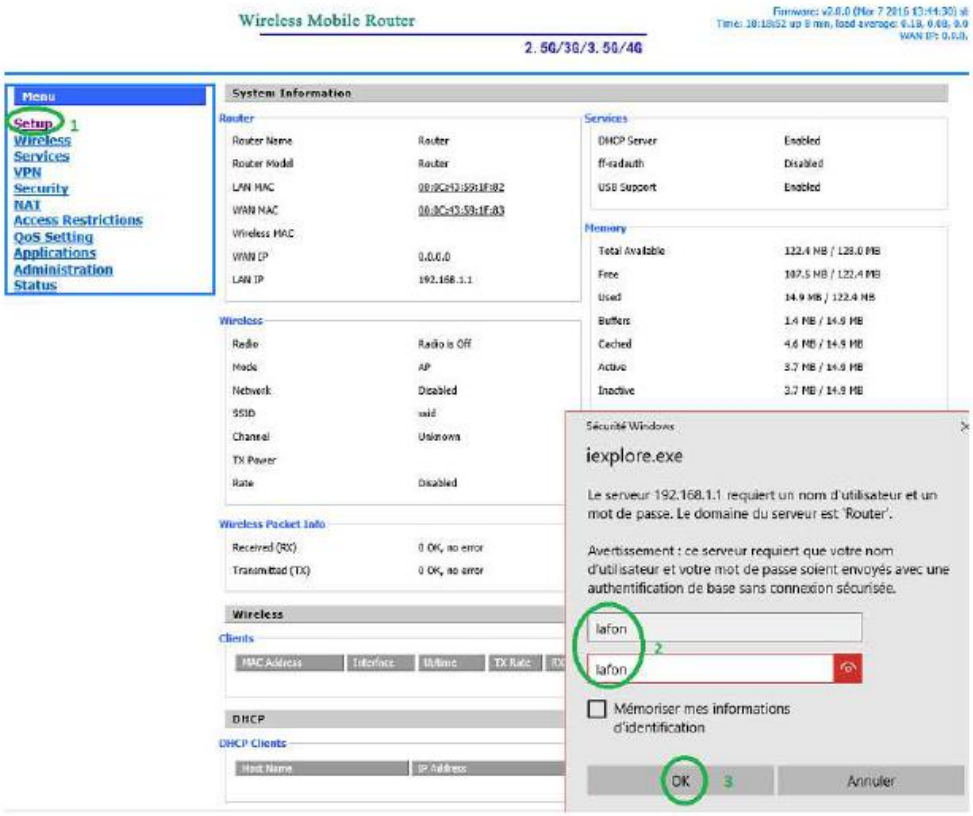
Check that the router is powered on : blue LED named « POWER » lit.
Configure the network interface card of the LAPTOP as below at the Network and Sharing Center of Windows.



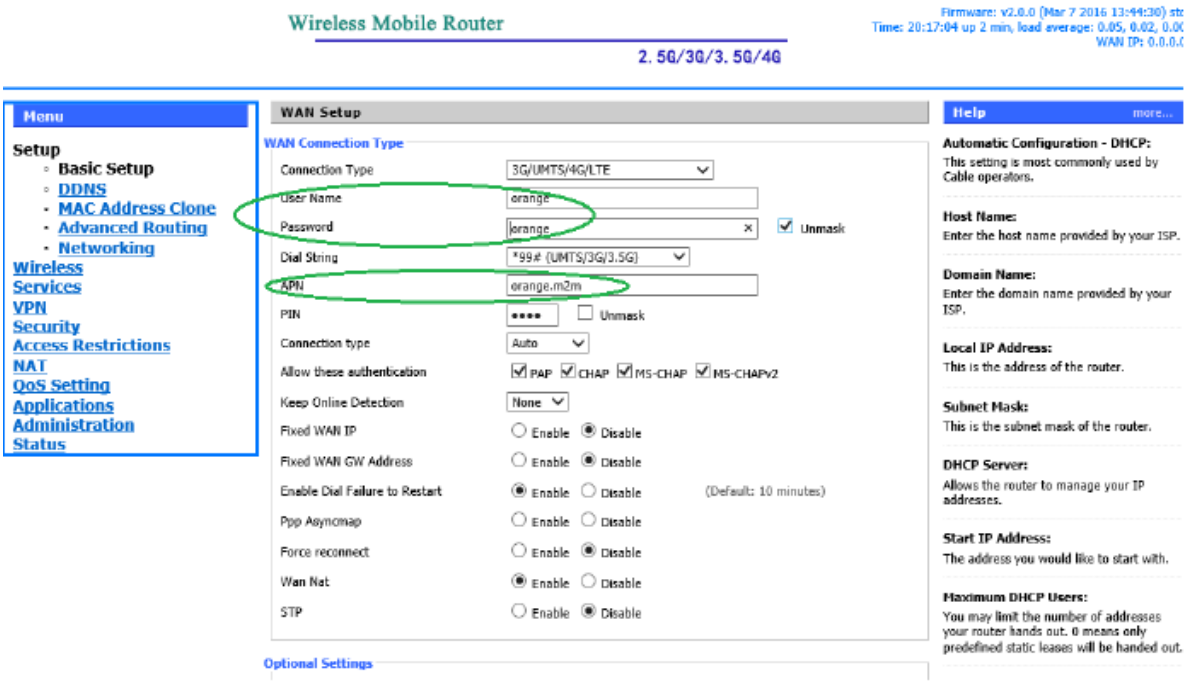


Now connect your LAPTOP to the WAN input of the router.

Launch a web browser.
Type URL http://192.168.1.1:8080
You will get the home page of the router;
Click Setup and type « lafon » in the filed user and « lafon » in the field password:

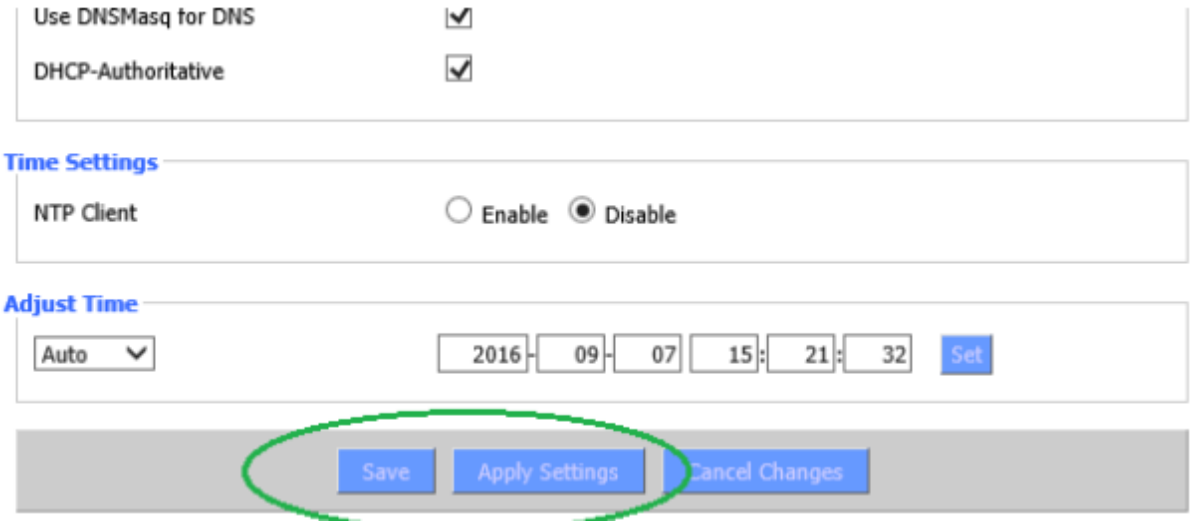


When you click Setup, you will get the page:



By default, the APN (Access Point Name, it is an identifier defined by the operator to allow access to the network for a user) is set to « orange.m2m » **; If you change the operator, you must fill in the APN given with the SIM card** ; if you don't have it, request it to the supplier of the SIM card.
Sometimes, the APN comes with a user name and a password. With APN orange.m2m, the username is « orange » and the password is « orange »

When the changes are complete, go to the bottom of the page …



…and click « apply settings » :

Then click « save »

At the end, after the router rebooting, the blue LED Online should be lit.

OCPP SETTINGS

Field	Meaning
firmwareVersion	Software version
chargePointVendor	LAFON TECHNOLOGIES
ChargeboxId	OCPP identifier of the station (chargeBoxIdentity)
chargeBoxSerialNumber	Terminal serial number
chargePointSerialNumber	OCPP kit serial number
chargePointModel	Station product number
chargeBoxModel	Station serial number
Iccid	SIM card number
OCPP_SERVER_URL	URL of the central system (OCPP server)
LibreService	true = the station can be used without reading a tag
AllowOfflineTxForUnknownId	true = if the station is offline, unknown tags are accepted
AuthorizationCacheEnabled	true = activates the OCPP cache, a list of last tags accepted or rejected. If the tag is in the cache, no authorization request is sent to the server.
LocalAuthorizeOffline	true = activates the OCPP white list when the station is offline.
tagPourRepriseCharge	Identifier used in automatic transactions performed after a power cut.
tagPourLibreService	Identifier used in self service transactions sent to the server
NumberOfConnectors	Number of charge points (sides) of the station.
ConnectionTimeOut	Time (seconds) to plug the vehicle after authorization of the charge point.
Switch2Gto3GLevel	Limit (in dBm) to switch from 2G to 3G.
Strong2Gto3GRetryInterval	Time (in days) to recalculate 2G/3G switching.
WeakSignal2GLevel	Limit (in dBm) to send a warning message statusNotification, WeakSignal
WeakSignalIntervalAlert	Time (in days) to resend the warning message tatusNotification, WeakSignal
HeartBeatInterval	Period (in seconds) of the HeartBeat message.
daysToLog	Duration (in days) of the diagnostic logs.
OCPP_BORNE_PATH	URL of the station web services (incoming requests)
ModeSSL	true = SSL active on server
SSLSuperviseur	Name of the SSL certificate of the server.
SSLBorne	Name of the SSL certificate of the station.
MaxCurrent	Maximal current (in A) delivered by each charging point
PDL_Power	Maximal power (in kW) delivered by the charging point

AuthorizeTimeout	Response time (in seconds) given by the supervisor before rejecting the authorization request and to switching the offline mode
LocalLanguageSelection	Language selection option on the terminal. If activated, key 4 allow you to change the language among the 4 stored in the terminal (depending on the language pack installed)
VehiclePresenceSensorOption	Vehicle presence sensors option. If activated, the DataTransfer linked to the vehicle sensors are emitted at each start and at each change of state of the sensors.
PanelLockInIdleState	Locking or not to the access socket in idle state. Allow access to the socket to plug in before identification.
CableReleaseOnPilotDisconnection	Option to automatically release the cable at the end of charging if the cable is disconnected from the vehicle. Valid only in mode 3 and if the charge is not a chargeable bank charge.
RepartitionPuissanceNonZeReady	To authorize loads with a power lower than the minima imposed by the ZE Ready standard
TransactionMessageAttempts	Number off attempts to send messages to the supervisor.
TransactionMessageRetryInterval	Time in seconds between each attempt to send a message after a failure
MeterValueSampleInterval	Interval in seconds of sending transaction data in real time
MeterValuesSampledData	List of data provided by the terminal in real time during charging.

If the terminal is equipped with the payment option by bank card, this option is configured using the following keys :

Field	Meaning
BillingMode	Billing mode
NumberBankCardReader	Unique POS number declared with the bank payment agency
IDTagBankCard	The identifier to use for the StartTransaction associated with a charge by bank payment
ChargePrice	Unit price for payment algorithms. Format X.XX or XX.XX in Euros
ChargePrice2	Second unit price when necessary
BankCardMinAmount	Minimum amount to invoice. To be informed according to the merchant contract. Below this amount, the charge is free.
BankCardMaxAmount	Maximum amount to invoice. Whatever the calculation, the amount invoiced will not exceed this amount.
FreeChargingDuration	Free period at the starting of charging, in seconds.

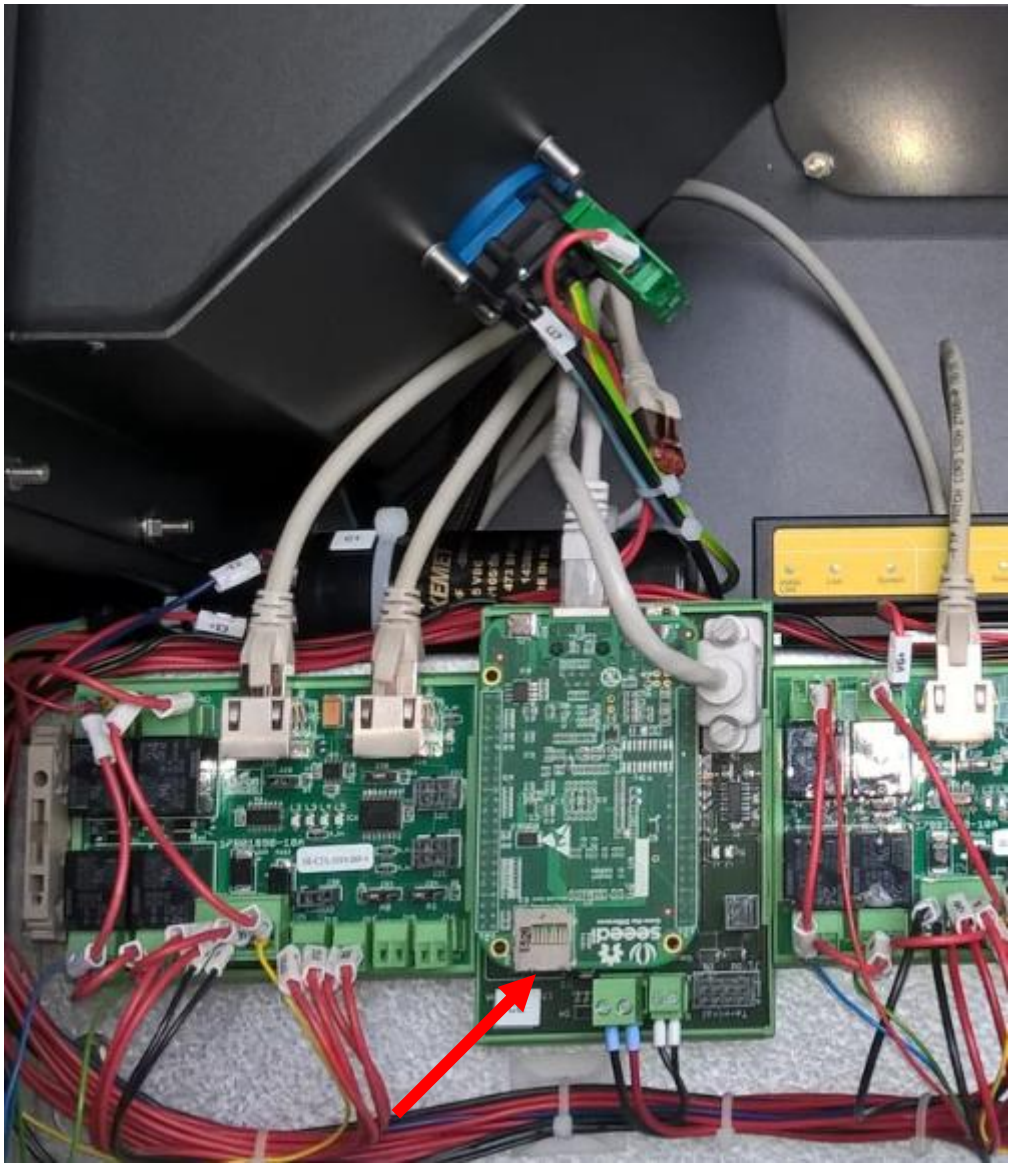
Some keys are only available for terminal with OCPP1.6 version. The exhaustive list of parameters is available in the document : PUL200618 – CLES OCPP 1.6 DANS LES BORNES LAFON.

These parameters are configured :

- Either locally using a config CSV file, to be placed on the µSD card of the OCPP kit (factory mainly),
- Either locally using the embedded website (recommended on site),
- Either remotely via the OCPP command ChangeConfiguration

Configuration using a config CSV file

OCPP settings can be configured locally in a CONFIG.CSV file, located in the µSD card of the OCPP kit.



This file may be modified with a text editor. **Be careful however to keep the ANSI encoding of the file**.

config.csv - Bloc-notes

Fichier Edition Format Affichage ?

```
key;readonly;value
ChargeboxId;0;LAFONTECH01234
chargeBoxSerialNumber;1;1602-1234
chargePointSerialNumber;1;1602-5678
chargePointModel;1;17803500
chargeBoxModel;1;2816GT2YV5
iccid;1;8633601174158965
OCPP_SERVER_URL;0;http://195.25.105.234:80/Ocpp/CentralSystemService
AllowOfflineTxForUnknownId;0;false
AuthorizationCacheEnabled;0;false
ConnectionTimeOut;0;30
DataConsumption;1;0
HeartBeatInterval;0;0
LocalAuthorizeOffline;0;false
MaxCurrent;0;0
MeterValuesSampledData;0;Voltage,Current.Import,Power.Active.Import,Energy.Active.Import.Register
MeterValueSampleInterval;0;0
NumberOfConnectors;1;2
PDL_Power;0;0
CentralSystemTimeOut;0;20
tagPourRepriseCharge;0;00000000
daysToLog;0;60
ModeSSL;0;false
SSLSuperviseur;0;none
SSLBorne;0;none
chargePointVendor;1;LAFON TECHNOLOGIES
firmwareVersion;1;BBBC121B109A
```

Configuration using the embedded website

With a PC connected locally on the router by a ethernet cable and configured on the address 192.168.1.253 (see chapter router settings), access the terminal's internal site with an internet browser using the follower URL :

http://192.168.1.254:5000.

This site provides access to the following informations and functions :

- Access to the configuration and possibility to edit the modifiable parameters
- Read the latest statuses sent by the terminal
- Read cache and white list
- Consult the SmartCharging profiles of the charging stations and those currently being applied
- Carry out a hard Reset of the terminal.

Concerning the configuration, the parameters are grouped by function, classification likely to evolve.

-- Lire	SignalLevel	0	***
-- Modif	Switch2Gto3GLevel	-81	***
-- Modif	Switch3Gto2GLevel	-95	***
-- Modif	WeakSignal2GLevel	-93	***
-- Lire	iccid	PROD	***

OCPP * Cle valeur

OCPP16_Param * Cle valeur

-- Modif	AuthorizationKey		***
-- Lire	AuthorizeRemoteTxRequests	false	***
-- Modif	LocalAuthListEnabled	false	***
-- Modif	LocalAuthorizeOffline	false	***
-- Modif	LocalPreAuthorize	false	***
-- Modif	MeterValuesSampledData	Voltage,Current.Import,Power.Active.Import,Energy.Active.Import.Register	***
-- Modif	MinimumStatusDuration	2	***
-- Lire	ReserveConnectorZeroSupported	true	***
-- Modif	StopTransactionOnInvalidId	true	***
-- Lire	SupportedFeatureProfiles	Core,FirmwareManagement,LocalAuthListManagement,Reservation,RemoteTrigger	***
-- Modif	WebSocketPingInterval	0	***

Param * Cle valeur

-- Lire	AddWhiteListBeagle	false	***
-- Modif	CableReleaseOnPilotDisconnection	false	***
-- Modif	ConnectionTimeOut	30	***
-- Lire	IdentificationWhiteListBeagle	false	***
-- Modif	LibreService	false	***
-- Modif	LocalLanguageSelection	false	***
-- Modif	MaxCurrent	100	***
-- Lire	NumberOfConnectors	02	***
-- Modif	PDL_Power	16000	***
-- Modif	RepartitionPuissanceNonZeReady	false	***
-- Modif	StopTransactionOnEVSideDisconnect	false	***
-- Modif	UnlockConnectorOnEVSideDisconnect	false	***
-- Modif	VehiclePresenceSensorOption	false	***
-- Lire	chargeBoxSerialNumber	PROD	***
-- Modif	daysToLog	60	***
-- Modif	tagPourLibreService	00000001	***
-- Modif	tagPourRepriseCharge	FORFAIT	***

paiement * Cle valeur

-- Modif	BankCardMaxAmount	20	***
-- Modif	BankCardMinAmount	0	***
-- Modif	BillingMode	128	***
-- Modif	ChargePrice	1.00	***
-- Modif	ChargePriceEnergy	0	***
-- Modif	ChargePriceTime	0	***
-- Modif	FreeChargingDuration	0	***
-- Modif	FreeChargingEnergy	0	***
-- Modif	IDTagBankCard		***
-- Modif	NumberBankCardReader	00007220	***

Remote Setup

All these parameters can be changed remotely by the server using ChangeConfiguration.request.

White list

Features of the OCPP white list (cache) are :

Parameter	Value
Number of identifiers in white list (max)	500
Number of offline transactions (max)	1000

Connexion information to the supervisor

On terminal software versions greater than or equal to version KIPA308A and BBBC310A for the kit OCPP, a visual indication on the display lets you know if the terminal is connected to the supervisor on OCPP

Charger connected to the supervisor

Charger **not** connected to the supervisor

ETHERNET CONNECTION

The station must accept OCPP incoming connections for commands sent by the server (remote start and stop for example). Thus, the network administrator will have to route the incoming data to the station. On the other side, outgoing data from the station must be allowed towards the server on any firewall or proxy present in the local network.

Incoming connections:

1. HTTP to the port configured in the key PortService (see above)
2. Optional: SSH port 22 for remote support

Outgoing connections:

1. HTTP to the server port
2. FTP to server FTP port (ports 20 and 21)

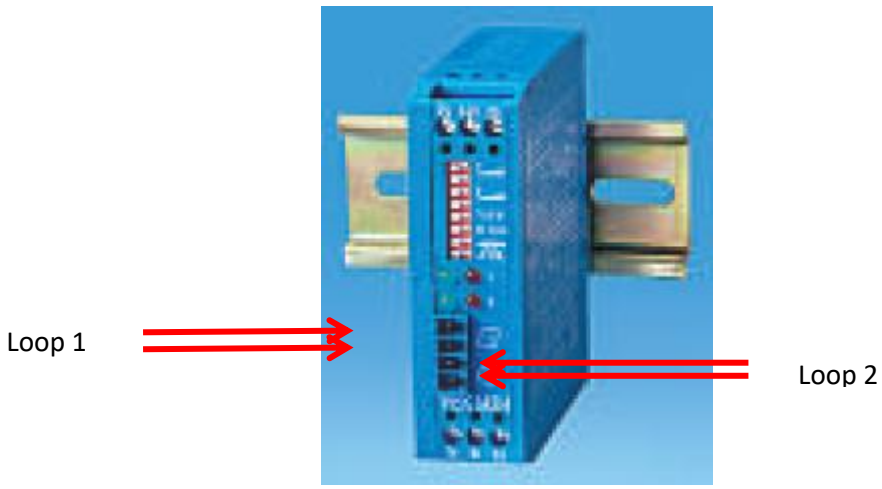
The Ethernet configuration is set in file CONFIG.CSV of OCPP kit with the following keys.

Champ	Valeur
Lan_Mode	TRUE
LAN_DHCP	TRUE : DHCP active, FALSE : static IP address
LAN_StaticIP	Local IP address if DHCP = FALSE
LAN_Gateway	IP address of gateway
LAN_Network	Network IP address
LAN_Netmask	Network mask
LAN_DNS1	Primary DNS IP address
LAN_DNS2	Secondary DNS IP address
LAN_PublicAccessPoint	IP address or domain name used by the server to access the station
PortService	Port used by server to access the station
LAN_HTTPProxy	HTTP proxy address
LAN_HTTPSProxy	HTTPS proxy address
LAN_FTPProxy	FTP proxy address

VEHICULE DETECTION

As an option, the charging station may be equipped with a vehicle detector using a current loop. The inductive loop, located around the parking place, let the station detect the presence or the absence of a vehicle. The sensor manage two loops.

MID2E-800 system (Magnetic AUTOControl)



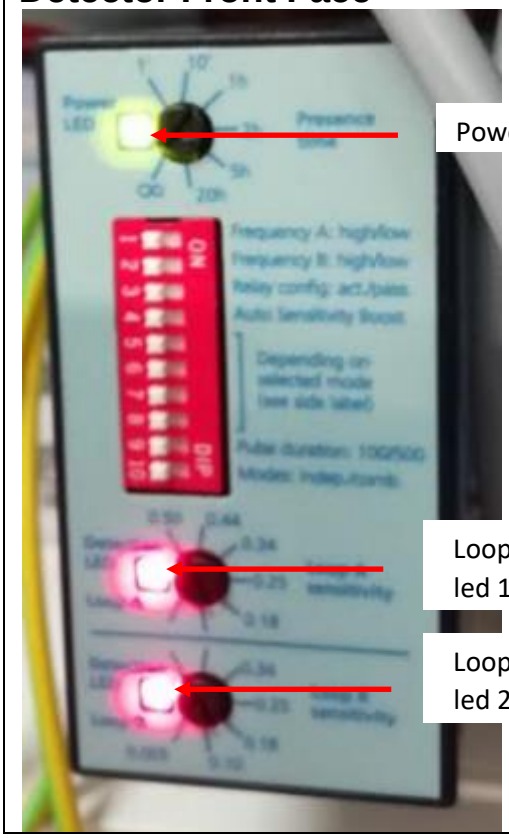
The loop 1 must be connected to the two connectors labelled « loop 1 » on the front face of the detector. Ditto for the loop 2

The detector is set from factory with a configuration suitable for the most common situations. However, if needed, it is possible to adjust the behavior of the module using its DIPSWITCHES :

<table>
<tr><th>Dipswitch</th><th>Usage</th></tr>
<tr><td>1</td><td rowspan="2">Loop 1 sensitivity :
<table>
<tr><th>1</th><th>2</th><th>Sensibilité</th></tr>
<tr><td>Left</td><td>Left</td><td>Low (0.64% f/F)</td></tr>
<tr><td>Right</td><td>Left</td><td>Medium – (0.16% f/F)</td></tr>
<tr><td>Left</td><td>Right</td><td>Medium+ (0.04% f/F)</td></tr>
<tr><td>Right</td><td>Right</td><td>High (0.01% f/F)</td></tr>
</table></td></tr>
<tr><td>2</td></tr>
<tr><td>3</td><td rowspan="2">Loop 2 sensitivity (ditto loop 1)</td></tr>
<tr><td>4</td></tr>
<tr><td>5</td><td>Loop frequency :
Left : 30 kHz
Right : 130 kHz
Used to avoid interferences between to loops located side by side.</td></tr>
<tr><td>6</td><td>Vehicle detection hold time:
Left : 5 minutes
Right : infinite
Do not modify, leave in right position</td></tr>
<tr><td>7</td><td rowspan="2">Presence/direction mode
Do not modify, leave both switches to the left</td></tr>
<tr><td>8</td></tr>
</table>

MATRIX D 12-24 MF System (MATRIX)

Detector Front Face



Detector connector

The loop 1 must be connected between pins 7 and 8.
The loop 2 must be connected between pins 8 and 9.

The loops are connected between pins 7 / 8 for loop 1 and 8 / 9 for loop 2 of the accessible connector after removing detector from its detachable connector.

Factory settings

The detector is set from factory with a configuration suitable for the most common situations.

- All dipswitches on front face are in OFF position.
- The potentiometer Presence Time is set on ∞
- The potentiometers **LoopA Sens Adj** and **LoopB Sens Adj** are set on 0.50

However, if needed, it is possible to adjust the sensibility of each loop using the potentiometers (LoopA Sens Adj for loop 1 and LoopB Sens Adj for loop 2).

LEDS status

- The LED power (green) must be ON
- During normal operation, the red LED is ON as long as the loop detects a metal object. If the red LED flashes, it's a failure and it means probably that the loop is open.

VEK MNH2-R24-C (FEIG Electronic)

Position of the dipswitches

Connection of loops by the installer

Loop 1
(between L1a and L1b)

Loop 2
(between L2a and L2b)

Loop 1 corresponds to the parking space for charging point 1. It is connected from below to the orange plug-in connector. Ditto for the loop 2

The detector is set from factory with a configuration suitable for the most common situations. However, if necessary, it is possible to act on the first 4 DIPSWITCH of Channel 1 (framed in yellow) to adjust the operation :

Dipswitch	**Utilisation**
1	Loop 1 Sensitivity :
2	**1** / **2** / **Sensibilité** OFF / OFF / Low ON / OFF / Middle low OFF / ON / Middle high ON / ON / High (0.01%)
3	Loop 2 Sensitivity (dipswitches 3 & 4)
4	

The meaning of the state of the detector's LEDs is described in the green box

BANK READER

THE PULSE 22 GLINE CHARGING STATION CAN BE OPTIONALLY EQUIPPED WITH A CONTACTLESS CARD READER. THIS OPTION CAN EQUIP THE TERMINAL AS SOON AS IT LEAVES THE FACTORY.

IMPORTANT NOTE:

THE READER BANK MUST BE ACTIVATED IN THE TERMINAL TO BE FUNCTIONAL (MENU SYSTEM / IDENTIFICATIONS / READER BANCAIRE)

THE BANKING READERS IS AS FOLLOWS:

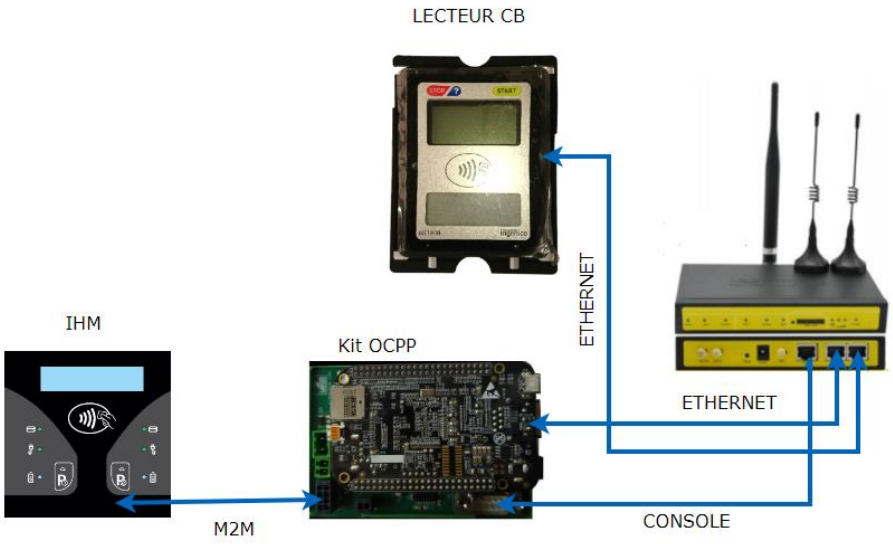
Ingenico iUC180B Bank Reader

FRONT SIDE (USER SIDE VIEW)

BACK SIDE

To work, the CB reader must connect to the Internet.

Simplified diagram of the connection of the Ingenico iUC180B CB reader to the Internet in OCPP1.5



The CB reader iUC180B.is factory set according to these parameters:

- IP reader: 192.168.1.10
- Gateway: 192.168.1.1
- Axis Primary Server: 10.23.47.60
- Axis server port: 39979 (PKI V3 dual authentication)
- SSL: Yes
- TermNum: 117XXXXX ➔Number assigned by MADIC industries
- IP Server Download: 91.208.214.34
- Server Port Download: 7004
- SSL Download: NO

To be functional it must be initialized with a unique number declared by MADIC industries.

In order to obtain this one, we need the EMV contactless type 1 (ERT45) EMV business contract that the customer has taken out with his bank.

It is necessary to provide its documents to MADIC industries so that it proceeds to its creation.

Once this number is obtained, a configuration and a test are performed at the factory to ensure its proper operation.

When starting the terminal, the reader iUC180B must be in this state:

It is possible to make sure of the connection of the reader to the Ingenico server by means of a ping realized in this way:

1) To enter the reader configuration menu, you must:

- Press the maintenance button (button on the back of the reader) and keep it pressed.

- Wait for the LED to flash red and then release the button.

Information will be displayed on the back screen.

You have to wait for the "hello" display to access the menu.

2) Once in the configuration menu:

- Press "*" to get the menu
- Press 1 to select "1 - APPLIADS"
- Press 3 to select "3 - MAINTENANCE"
- Press 3 to select "3 - PING AXIS"

- Press 1 to run ping access.

To exit the mode, press the push button for about 3 seconds until the LED turns blue and then goes out.

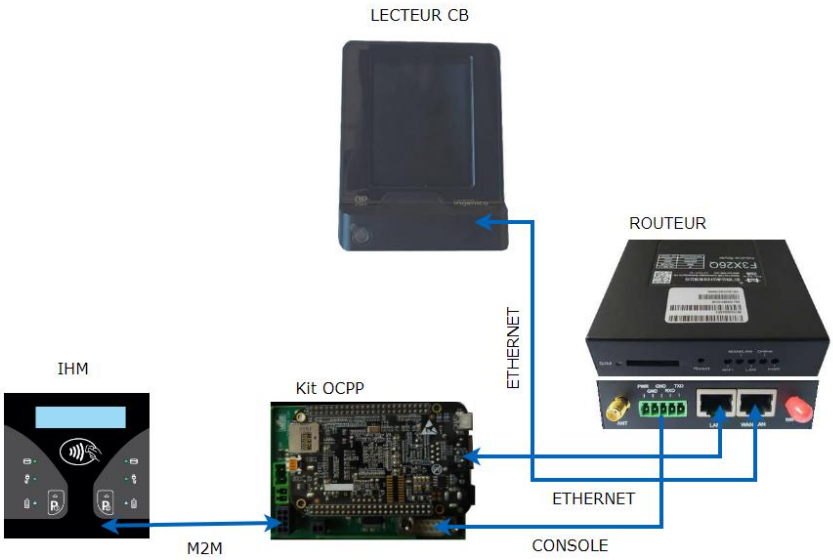
Check on the front side that the drive is restarting with the date / time display then Hello

Ingenico Self / 2000 CL Bank Reader

FRONT SIDE (USER SIDE VIEW)

BACK SIDE

Simplified diagram of the connection of the CB SELF / 2000 CL reader to the internet network in OCPP1.6 JSON



The Ingenico SELF / 2000 CL CB reader is factory configured according to these parameters.:

- IP lecteur : 192.168.1.10
- Passerelle : 192.168.1.1
- **Serveur Axis Primaire : 91.208.214.1**
- **Port serveur Axis : 39879**
- SSL : Oui
- ADS_AX_PO1
- TermNum : 117XXXXX ➔ *Number assigned by MADIC industries*

To be functional it must be initialized with a unique number declared by MADIC industries.

In order to obtain this one, we need the EMV contactless type 1 (ERT45) EMV business contract that the customer has taken out with his bank.

It is necessary to provide its documents to MADIC industries so that it proceeds to its creation.

Once this number is obtained, a configuration and a test are performed at the factory to ensure its proper operation.

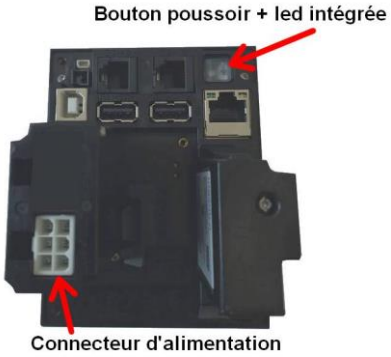
When starting the terminal, the reader SELF/2000 CL must be in this state:

SELF/2000 CL

It is possible to ensure that the reader is connected to the Ingenico server using a ping performed in this way:

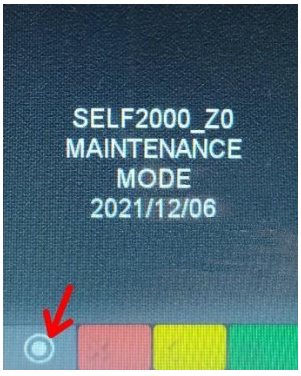
1) To enter the configuration menu of the SELF / 2000 CL reader, you must::

- Press the maintenance button (pushbutton on the back of the reader) and keep it pressed during start-up..



•Wait for the LED to flash red then release the button.
Information will be displayed on the front touch screen.
The reader must reach this display in order to access the menu.

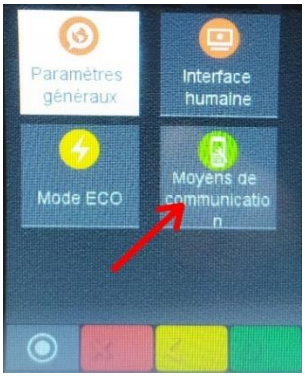
- Press the touch screen on the double circle



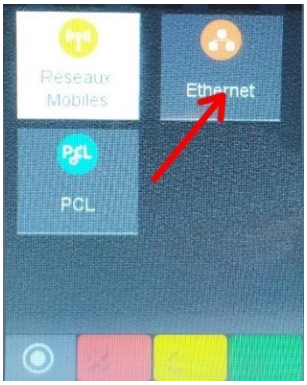
- then on the touch screen press Control Panel

- Then press terminal settings

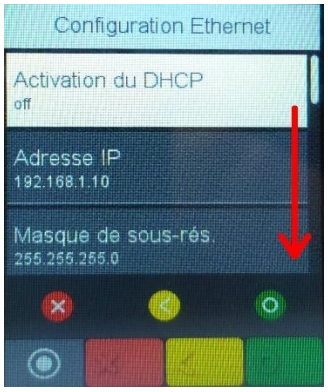
- Then press Means of communication

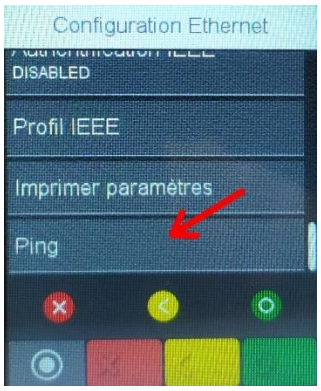


- Then press Ethernet

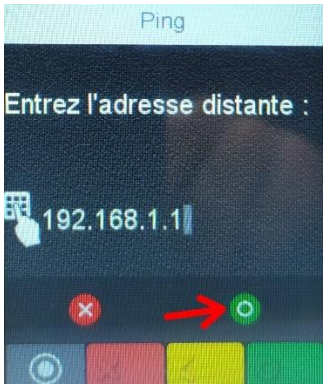


- Then drag the menu options until you reach Ping





- here you have to modify the IP address to ping and validate with the small green circle



- The ping is executed on the entered IP address

To exit this mode, you must unplug and then re-plug the power supply to the SELF / 2000 CL reader.

The supervisor in charge of administering the terminal must enter the following parameters:

• **IDtagBankCard**: value of the identification key for the bank authorization request.

• **ChargePrice** = unit price from 0.01 € to 99.99 € TTC.

• **FreeChargingDuration** = The time in seconds (from 0 to 9999) of effective charge before the charge becomes charged.

• **NumberBankCardReader** = Bank reader number

• **BillingMode** = 0 no CB payment, 1 algorithm 1, etc ....

• **ChargePriceTime =** price in euros per minute of parking.

• **ChargePriceEnergy =** price in euros per kWh delivered to the vehicle.

• **BankCardMaxAmount**: in euro. This parameter allows to vary in time the contactless payment limit which is 20 € by default (some cards already accept 30 €)

• **BankCardMinAmount**: in euro. The minimum payment amount depends on the customer's commercial contract. In the case of volume invoicing, this may imply that the charge is free for a certain period of time

Definition and example of operation of the reader without contact with parameterization of the algorithm 1 **(Billing Mode = 1)**:

1. Type of payment: Postpayment

2. Free period from 0 to N (N in seconds) defined by the **FreeChargingDuration parameter**

3. Amount to be paid = **Fixed** price X (X in euros with 2 decimals allowed example: 2.50 euros) defined by the parameter **ChargePrice**

Thus, if **FreeChargingDuration** = 120 and **ChargePrice** = 2.50, the kiosk will grant a free charge during the first 2 minutes (120 seconds) and will charge the charge at 2.50 euros over 2 minutes.

Definition and example of operation of the contactless reader with parameterization of algorithm 2 **(Billing Mode = 2)**:

1. Type of payment: Postpayment

2. Free period from 0 to N (N in seconds) defined by the **FreeChargingDuration parameter**

3. Amount to be paid (in euro in truncated proportion) = Volume (kWh) x ChargePrice (Unit price in euros with 2 decimals allowed example: 0.20 euros defined by the parameter **ChargePrice**)

Thus, if **FreeChargingDuration** = 300 and **ChargePrice** = 0.20, the terminal will grant a total free charge during the first 5 minutes (300 seconds) if the charge time has not exceeded 5 minutes. After 5 minutes of

charging, **the delivered volume is fully counted since the first second**. Thus, if the delivered volume is 1,687 kWh then the amount invoiced will amount to (1,687 x 0.20) = 0.33 euros (truncated amount).

Definition and exemple of operation of the contactless reader with parameterization of algorithm 3 **(Billing Mode = 3)**:

1. Type of payment : Postpayment
2. Free period from 0 to N (N en secondes) defined by the **FreeChargingDuration** parameter
3. Amount to be paid (in euro in truncated proportion) = ChargePrice + [Volume (kWh) x ChargePriceEnergy] + [Duration (Min) x ChargePriceTime]. Rounding precision is in Wh and second.

Definition and exemple of operation of the contactless reader with parameterization of algorithm 4 **(Billing Mode = 4)**:

1. Type of payment : Postpayment
2. Free period from 0 to N (N en secondes) defined by the **FreeChargingEnergy** parameter
3. Amount to be paid (in euro in truncated proportion) = **ChargePriceOption x** duration in minutes

The type of paiement is identical to algorithm 130 but with payment at the end of the charge

Definition and example of operation of the reader without contact with parameterization of the algorithm 129 **(Billing Mode = 129) (Not available on reader CB iUC180B)** :

1. Type of payment: Prepayment authorization with the amount entered in the BankCardMaxAmount key. (the price paid cannot exceed this value), then an automatic validation of the payment is carried out at the end of the charge when the vehicle is disconnected.
2. Amount to pay = **ChargePrice** + (**ChargePriceTime** * time i, minute) + (**ChargePriceEnergy** * Volume (kWh))

The amount to be paid is limited to the value of these keys :
if the user has a charge time less than the **FreeChargingDuration** key, the payment will not be validated**..**
If the volume is less than the **FreeChargingEnergy** key, the payment will not be validated..
If the calculated price is lower than the **BankCardMinAmount** key, the payment will not be validated.
If the calculated price is greater than the **BankCardMaxAmount** key, the price will be aligned with the value of this key..

In this operating mode, payment validation is only effective at the end of charging..

It is adjusted according to the keys: **FreeChargingDuration , FreeChargingEnergy, ChargePriceTime, ChargePriceEnergy**, **ChargePrice**, **BankCardMinAmount, BankCardMaxAmount**

For example if the following keys have the value: **BankCardMaxAmount** = 20 euros, that **Charge Price** = 5 euros, **ChargePriceTime** = 1 euro and **ChargePriceEnergy** = 0 euro.

When the user arrives at the terminal to initiate a charge, the bank reader displays a pre-authorization request with the value of 20 euros.

If the pre-authorization is accepted, the user is allowed to connect the vehicle.

1st case:

If the user returns after 30 minutes and initiates the charging stop then disconnects the vehicle from the terminal, the payment validation is carried out automatically, the price calculated for the transaction will be:

5 + (30 * 1) + ([volume in kWh] * 0) = 35 euros.

In this case, the calculated price is greater than the value of the **BankCardMaxAmount key** of 20 euros. The payment made will therefore be limited to 20 euros.

2nd case:

If the user returns after 10 min the payment will be:

5 + (10*1) + ([volume in kWh] * 0) = 15 euros.

The calculated price is lower than the value of the **BankCardMaxAmount** key key of 20 euros. The payment made will therefore be 15 euros.

Note that payment validation is performed automatically if the vehicle remains connected for more than 24 hours to the value of the **BankCardMaxAmount** key**.**

Definition and example of operation of the reader without contact with parameterization of the algorithm 130 **(Billing Mode = 130)** Not available with CB reader IUC180B:

1. Type of payment: Prepayment authorization with the amount entered in the BankCardMaxAmount key. (the price paid cannot exceed this value), then an automatic validation of the payment is carried out at the end of the charge when the vehicle is disconnected.
2. Amount to pay = **ChargePriceOption** * time in minutes
   The amount to be paid is limited to the value of these keys :
   - if the user has a charge time less than the **FreeChargingDuration** key, the payment will not be validated.
   - If the volume is less than the **FreeChargingEnergy** key, the payment will not be validated..
   - If the calculated price is lower than the **BankCardMinAmount** key, the payment will not be validated.
   - If the calculated price is greater than the **BankCardMaxAmount** key, the price will be aligned with the value of this key..

   In this operating mode, payment validation is only effective at the end of charging..

3. **chargePriceOption** key is used to determine a rate based on the power supply by the charging station. It is defined like this :

   [power_1 – price_1 ; power_2-price_2 ;.... ;power_n-price_n]

4. Tariff calculation requires activating meter values via **MeterValueSampleInterval** key**.**
5. A calculation is made between two meters values to calculate the maximum average power attributed by the charging station to the vehicule.
6. The charge price will be determined by this calculated power multiplied by the charging time ;

   Exemple :

The chargePriceOption key is defined like this : [0 – 0.022 ; 10 – 0.044 ; 20 -0.066]

The user authorizes the charge with the maximum amount defined by **BankCardMaxAmount to 5 euros.**

The user connects the vehicule and charging starts.

The supervisor has activated the meters values via the key **MeterValueSampleInterval = 300 i.e. every 5 minutes.**

First case :

If the charge lasts 60 minutes and the maximum average power calculated between two consecutive meters values is 15 kW, then :

The tariff applied will therefore be 0.044 because the calculated power is > 10 kW and < 20 kW ([0 – 0.022 ; 10 – 0.044 ; 20 - 0.066]

The calculated price will therfore be :

60*0.044 = 2,64 euros

Second case :

If the charge lasts 120 minutes and the maximum average power calculated between two consecutive meters values is 22 kW, then :

The tariff applied will therefore be 0.066 because the calculated power is > 20 kW ([0 – 0.022 ; 10 – 0.044 ; 20 -0.066]

The calculated price will therfore be :

120*0.066 = 7,92 euros > in the key **BankCardMaxAmount = 5 euros so the price paid will be 5 euros**

Third case :

If the charge lasts 120 minutes but meters values are not enabled (**MeterValueSampleInterval = 0**), then :

The tariff applied will therefore be 0.022 because the calculated power is undetermined. So, the first value will be selected ([0 – 0.022 ; 10 – 0.044 ; 20 -0.066])

The calculated price will therfore be :

120*0.022 = 2,64 euros

Default setting

If these parameters are not known to MADIC industries at the time of shipment, the following settings will be applied by default:

BankCardMaxAmount : 20 € (Maximum amount cashable by the reader)

BankCardMinAmount : 0 € (Minimum amount cashable by the reader according to the cilent's banking contract)

ChargePriceTime : 0€

ChargePriceEnergy : 0€

NumberBankCardReader : the POS number provided by MADIC industries.

BillingMode : 1 (Payment Algorithm)

ChargePrice : 2 (Charge price - here 2 Euros)

FreeChargingDuration : 30 - (Free period in seconds) Not applicable if BillingMode = 128

IDTagBankCard : empty - (Bank IDs are passed as a unique key that always starts with '*')

It is not necessary to carry out more control for its commissioning.

MAINTENANCE

Routine maintenance

Routine maintenance operations should be conducted once per year. These operations mainly involve checking the condition of connections (checking the tightness, corrosion, etc.), interior and exterior cleaning, checking user safety systems (differential circuit breaker), visually inspecting the equipment's condition (general condition, socket holders...) and updating the software.

The terminals have been designed to make maintenance easy and to ensure that every part of the terminal is accessible.

Sealing

Purpose / location:

To ensure that the seals on the door, the sockets, the interface and the cable entries are in good condition.

Procedure:

1- Check the condition of the seals: no tearing or detaching.

2- Check the condition of the locks and linkages to ensure that seals are correctly compressed.

3- Check the condition of the cable glands on the cable entries.

If necessary, replace them as described under repairs.

Frequency:

During every intervention + annually

Purpose / location:

Check that connectors, cables on terminals, etc. are tightened.

Procedure:

Turn the circuit breaker upstream to the terminal's general switch to OFF .

Tighten the terminals and other connectors using appropriate tools.

Frequency:

Annually

Repairs

Replacing the seal of the façade door

Procedure:

1. Turn the circuit breaker upstream to the terminal's general switch to OFF .
2. Open the door using the key provided with the terminal.
3. Remove the worn seal.
4. Fit the new seal starting from bottom centre.
5. Turn the circuit breaker to ON.
6. Close the door and lock it with the key provided with the terminal.

If the charger is connected to an OCPP server, an error status may appear in the StatusNotification message, which gives information to help diagnosing failure situations.

In the StatusNotification message, the field vendorId will be “LAFON Technologies”, and the field info will give a label in English for the error.

ChargePointErrorCode	vendorErrorCode	Description
GroundFailure	1	Cut off of terminal or charge point
	0x1001	Cut off of AC sockets
PowerSwitchFailure	4	Contactor stuck
	0x1004	AC contactor stuck
OverCurrentFailure	6	RC disconnection
	0x1006	AC RC disconnection
Mode3Error	2, 3, 5, 0x1002, 0x1003 or 0x1005	CP pilot line error on mode 3 socket
	7 or 0x1007	PP pilot line error on mode 3 socket
OtherError	0xED	Error in the link between the Pulse controller and the OCPP board
	0xEE	Warning, end of firmware update
	0xEF	OCPP database corrupted
	0x00FE	Software version KO
	0x000A	Multiple errors
	0x000B	Surge arrestor default
	8	Emergency stop active (in models with emergency stop option)
	9	Socket not mounted

PRODUCT END OF LIFE

The elements below must be entrusted to companies specializing in the elimination and recycling of industrial waste and in particular:
- Disposal of the packaging:
The packaging consists of biodegradable cardboard which can be entrusted to companies dealing with the recovery of cellulose.
- Elimination of metal parts:
Metal parts, whether painted or made of stainless steel, are normally recyclable by companies specializing in the metal demolition sector.
- Elimination of electrical and electronic components.
Items such as electronic cards, electrical outlets and plugs, circuit breakers, contactors, and other electrical or electronic assemblies are considered WEEE and must be disposed of by companies specializing in the demolition of electronic components.
- Elimination of other parts:
Other parts such as rubber seals and plastic parts should be entrusted to companies specializing in the disposal of industrial waste.

CERTIFICATE

Emmanuel OURRY,
Directeur d'Etablissement
/Plant Manager

DOCUMENT REF. :
REF. DOCUMENT : 17801310-A

Bassens, le 22/04/2015

Déclaration de conformité
Conformity declaration CE

PULSE 22 : borne de recharge de véhicule électrique

Electric vehicle charging station

Je déclare au nom de la société LAFON, 44 avenue Victor Meunier, 33530 BASSENS, FRANCE, que l'appareil de type PULSE 22

Est conforme aux directives européennes :

- **2006/95/CE (Directive Basse Tension) relative au matériel électrique destiné à être employé dans certaines limites de tension**
- **2004/108/CE (Directive CEM) relative à la compatibilité électromagnétique**
- **1999/5/CE (Directive R&TTE) relative aux équipements hertziens et aux équipements terminaux de télécommunication**
- **94/62/CE relative aux emballages et déchets d'emballage**

Et aux normes :

- **NF EN 61851-1:2012 Système de charge conductive pour véhicules électriques**
- **NF EN 61851-22:2002 Système de charge conductive pour véhicules électriques - Partie 22: Borne de charge conductive en courant alternatif pour véhicules électriques**
- **NFC 15-100 Sécurité des installations électriques**

I hereby declare in name of LAFON, 44 Avenue Victor Meunier, 33530 Bassens France, that the equipment model PULSE 22

Meets the European Directives:

- **2006/95/EC (Low Voltage Directive) relating to electrical equipment designed for use within certain voltage limits**
- **2004/108/EC (EMC Directive) relating to electromagnetic compatibility**
- **1999/5/EC (R&TTE Directive) relating radio equipment and telecommunication terminal equipment**
- **94/62/CE relating to packaging and packaging waste**

And to standards:

- **IEC 61851-1:2010 Electric vehicle conductive charging system - Part 1: General requirements**
- **IEC 61851-22:2002 Electric vehicle conductive charging system - Part 22: AC electric vehicle charging station**
- **NFC 15-100 Low voltage electric installations**

DAQ 1203 K 01/13

ISO 9001 : 2008

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ISO 14001 : 2004

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