OCPP

GREEN'UP CHARGING STATIONS

USER GUIDE

Llegrand®

OCPP

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USE OF GREEN'UP CHARGING STATION WITH OCPP

Before you start

Legrand ESVE charging station use the protocol version OCPP 1.6J.

You need to have :

- a connected and functional charging station ;
- a communication kit cat.no 0 590 56 ;
- optional - a RFID kit cat.no 0 590 59 ;
- an available and functional OCPP 1.6J server ;
- a laptop to set the station and the communication kit ;
- a RJ45 cable between the laptop and the communication kit ;
- a connection to the server that can be used by the charging station ;
- the latest update package (including OCPP) available on the Legrand e-catalogue (www.legrand.fr) ;

How does it work ?

STEP 1 : Installation of the communication and RFID (option) kits.

Check the instructions sheet LE09802AA\XX

**STEP 2 :** Laptop connection to the communication kit.

Check the communication kit instructions sheet LE09802AA\XX page 14

STEP 3 : Charging station set up in OCPP mode

CONFIGURATION
PROCEDURE

1. Browse the charging stations's web pages by logging into the Communication Kit cat.no 0 590 56 via the IP address (default 192.168.1.200).

2. Connect to the web pages using the Id and password (by default admin/admin). For a reminder of the first connection procedure, please check the communication kit's instructions sheet LE09802A-XX.

3. Select the page "Charging Mode".
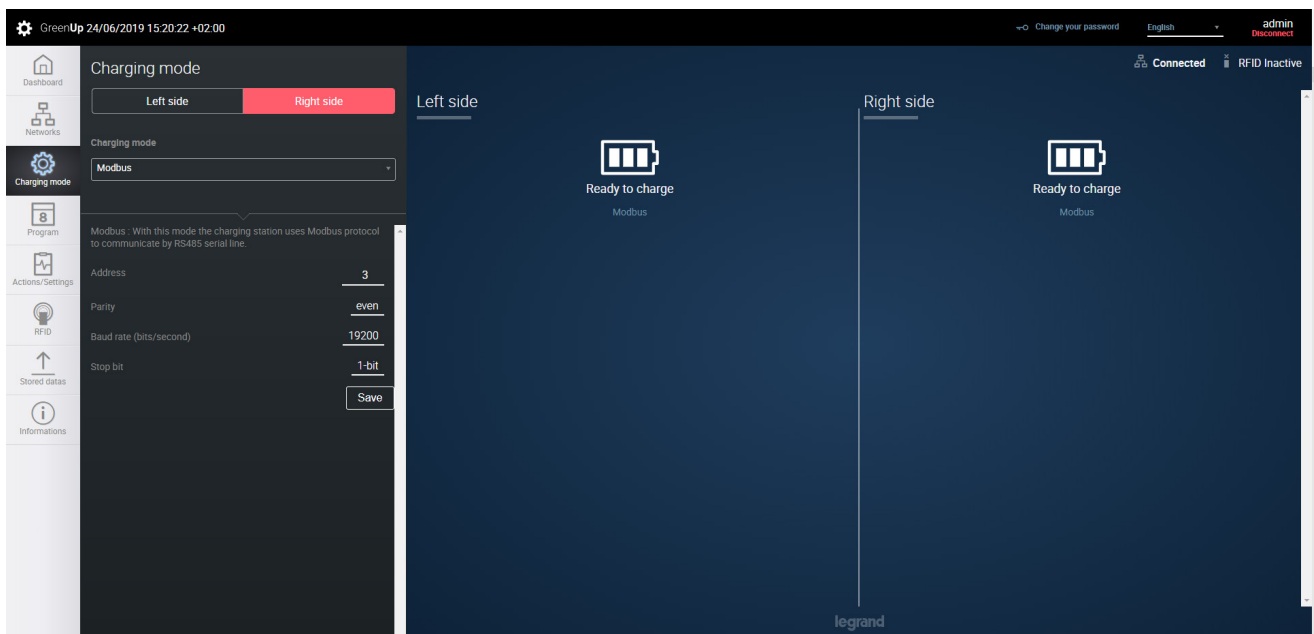
4. Select OCPP mode in the load mode selection tab.
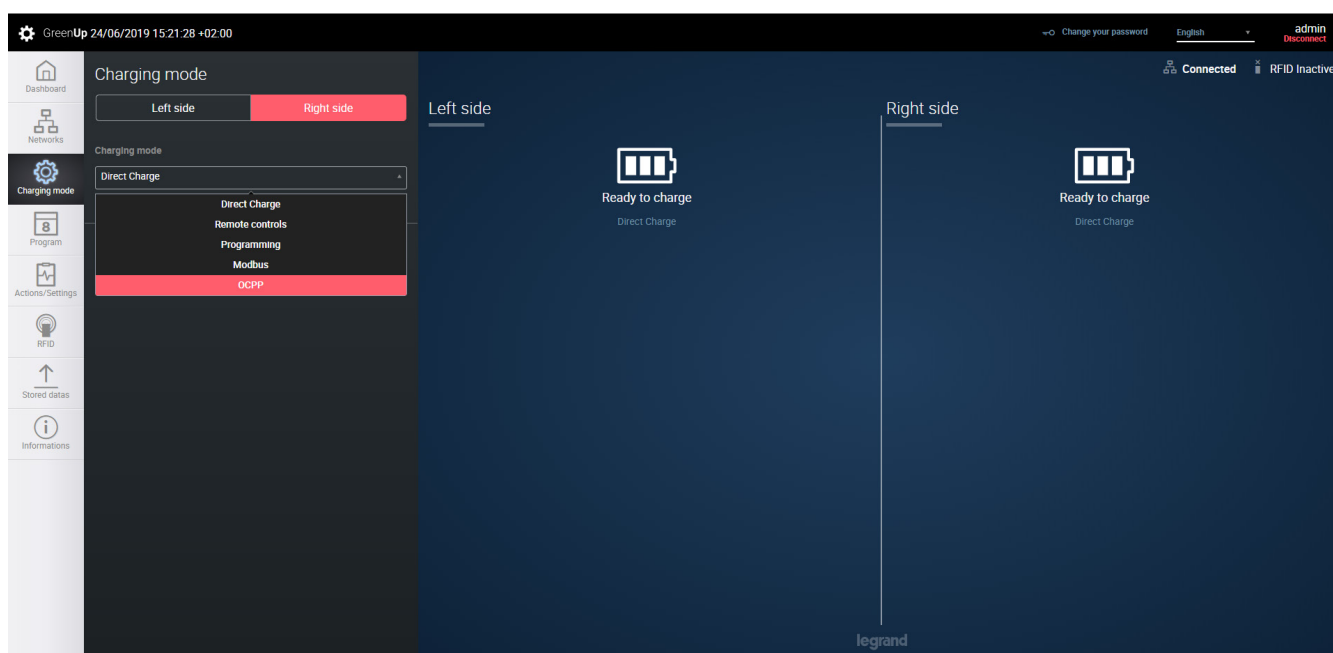
When selecting the OCPP charging mode, the charging station will change mode automatically.

For a double charging station, the OCPP charging mode will be imposed on both sides of the station (previously select the right side of the charging station).

OCPP

On the configuration page one find several parts :
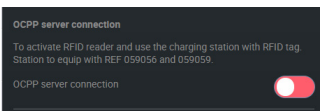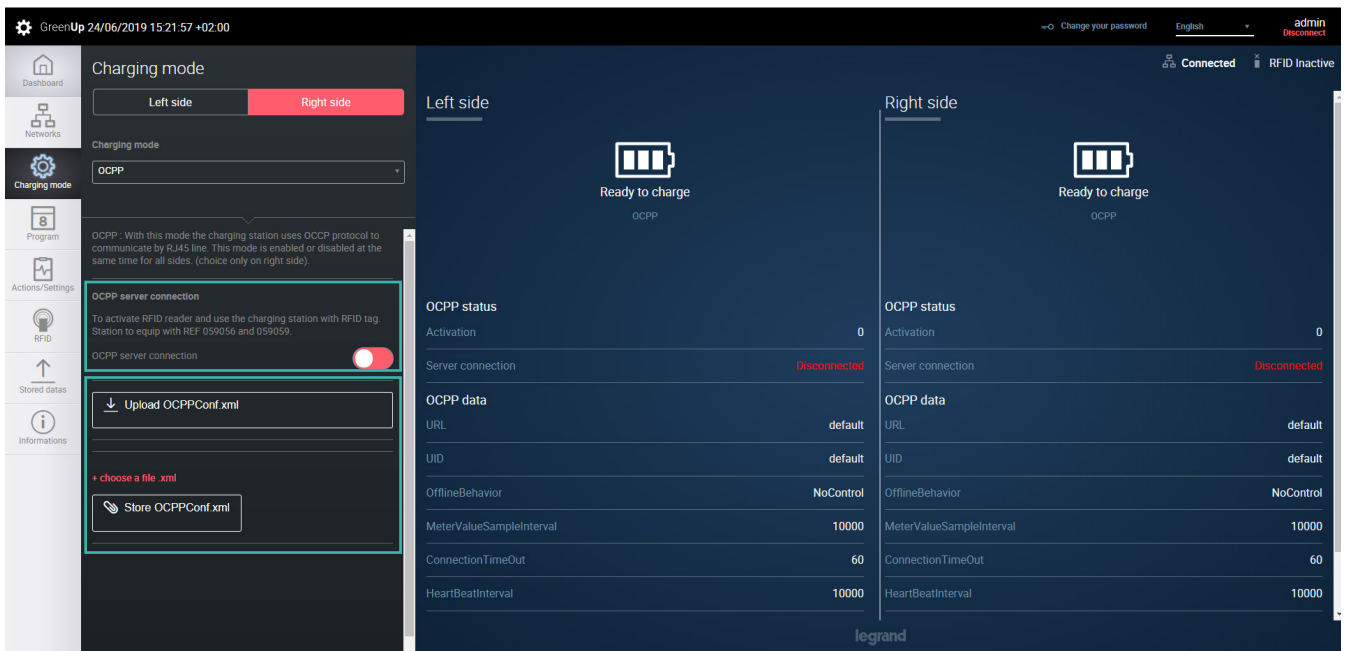
OCPP server connection button. When activated, the charging station attempts to connect to the server using the information transmitted in the OCPP configuration file (OCPPConf.xml). The web socket connection format is the following "URL - UID."
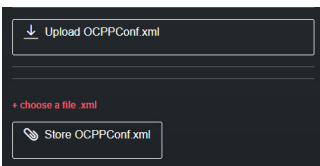
The first button allows you to get the existing OCPP configuration file from the charging station. This file serves as a template.

The second allows you to choose a modified file on the computer.

The third allows you to save, the file chosen on the computer, in the charging station.
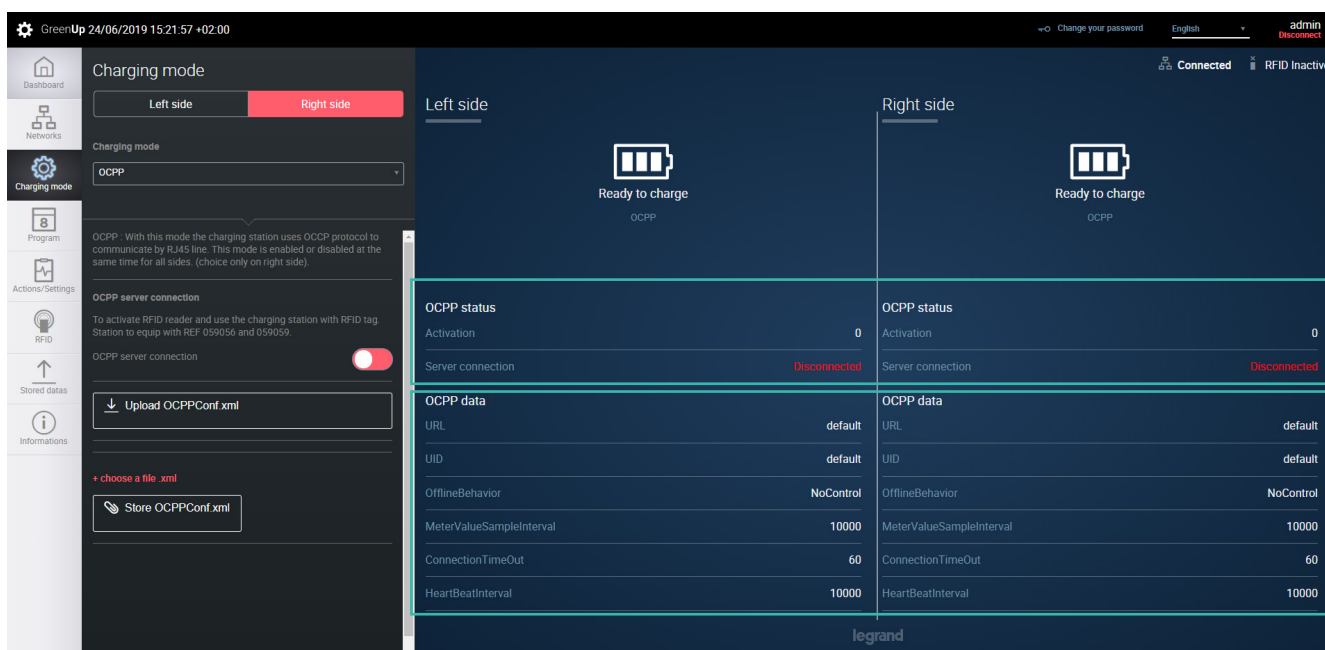
The OCPP status allows to know the connection situation of the charging station in relation to the OCPP server.

Activation: If the variable is 0, the terminal does not attempt to connect to the OCPP server. If the variable is 1, the terminal tries to connect to the OCPP server.

Connection to the server: If the variable is 0, the charging station is not connected to the server via web socket. If the variable is at 1, the charging station is connected to the server via web socket.

OCPP data allows you to know the configuration data in the configuration file. It is this data that will be used by the charging station. Example: For the web socket connection, the charging socket will use the URL-UID part informed.

5. Modifying and saving the configuration file

Download the configuration file which is on the charging station via the ″Recover OCPPConf.xml″ button, downloading takes a few seconds.

Once downloaded, it is possible to change it. It is important to respect the xml formatting of the file. Check the chapter ″Configuration file″.

Once the file is modified, use the ″choose a file .xml″ button to give the file's direction to the communication kit. Now you can press the ″Store OCPPConf.xml″ button to upload the file to the communication kit.

It is possible to control information on the page in the part entitled ″OCPP data″. It is recommended that you check the information carefully before taking the next step.

It is possible to directly change the charging station's network settings via the OCPP configuration file. It is also possible to change the network configuration of the communication kit through the ″Networks″ page.

Be careful when changing network settings, they will be taken into account immediately.

6. Activation of the OCPP service

Once the information is checked, it is possible to start the OCPP service on the charging station side. This is very simple, just click the "Connect to the OCPP server" button.

You can check the status of the activation and connection to the server on the page in the "OCPP Status" section.

CONFIGURATION
FILE

The configuration file allows you to transmit the information needed to set up the web socket connection between the charging station and the server, change the network configuration of the terminal and set up the charging point.

Possible configurations :

- The server's URI allows the login address to be transmitted to the OCPP server;
- UID of the charging station allows to transmit the identifier to be used by the terminal when connecting to the OCPP server;
- RJ45 port network configuration allows you to set up the IP address for the RJ45 port of the charging station
    - o IP address ;
    - o Subnet mask ;
    - o IP address of the gateway ;
    - o DHCP enable/disable
    - o IP address DNS1
    - o IP address DNS2
- WiFi network configuration allows WiFi network information to be transmitted using the charging station and the IP connection address of the charging station's WiFi port;
    - o Network's SSID ;
    - o WEP key ;
    - o IP address;
    - o Subnet mask ;
    - o IP adress of the gateway ;
    - o DHCP enable/disable
    - o IP address DNS1
    - o IP address DNS2
- Setting the badge reader to work in the event of an offline charging station (are allowed: all IDs, only locally stored IDs, no IDs)
- Setting up access to web pages allows you to change access to web pages (for security reasons, it is strongly recommended to change the access iD and password) ;

- o ID ;

- o Password ;

- MeterValueSampleInterval => allows you to set a value for the MeterSampleInterval setting at the charging station before connecting to the OCPP server ;

- ConnectionTimeOut => allows you to set a value from the ConnectionTimeOut setting to the charging station before connecting to the OCPP server ;

- HeartBeatInterval => sets a Value from HeartBeatInterval to the charging station before connecting to the OCPP server ;

- BasicAuthentication => allows you to manage the authentication of the client/server connection ;

- Charge point configuration => allows for each charging point of the charging station to change the following parameters individually :

  - o Indication of maximum current at the charging point ;

  - o Cable usage management (detachable cable or attached cable operation simulation) ;

  - o OCPP Action ;

To make it easy and automatic to read and write the file, we chose to offer an XML format. It is therefore important to follow the XML formatting rules to change the configuration file.

If the file content does not comply with the logical formatting of the XML, the file will not be taken into account when transferring to the communication kit from the web pages.

AVAILABLE FEATURES AND CONFIGURATIONS

The supported OCPP 1.6J functions (Borne to Server) are as follows :

- "Authorize" ex :

[2,"26765260829432299233","Authorize",{"idTag":"XXXXXXXXXXXXXXXX"}]

IdTagInfo support expiryDate and parentIdTag.

- "BootNotification" ex : [2,"46740660243372615052","BootNotification",{"chargeBoxSerialNumber":"260988","chargePointModel":"059004","chargePointVendor":"Legrand","firmwareVersion":"V01.01.65/V01.01.08","meterType":"internal"}]

- "DataTransfert" : N.A

- "DiagnosticsStatusNotification" example coming soon

- "FirmwareStatusNotification" example coming soon

- "Heartbeat" ex :

[2,"11101862315294265356","Heartbeat",{}]

- "MeterValues" ex :

[2,"14057949118014675557","MeterValues",{"connectorId":2,"transactionId":XXXX,"meterValue":[{"timestamp":"2019-04-19T16:26:44.277+02:00","sampledValue":[{"value":"1.64","context":"Sample.Clock","format":"Raw","mesurand":"Current.Import","location":"Outlet","unit":"A"},{"value":"3.1816661","context":"Sample.Clock","format":"Raw","mesurand":"Energy.Active.Import.Interval","unit":"Wh"},{"value":"381.79993","context":"Sample.Clock","format":"Raw","mesurand":"Power.Active.Export","location":"Outlet","unit":"W"}]}]}]

- "StartTransaction" ex :

[2,"31895085733530537308","StartTransaction",{"connectorId":2,"idTag":"XXXXXXX","meterStart":0,"reservationId":0,"timestamp":"2019-04-19T16:25:43.083+02:00"}]

IdTagInfo support expiryDate and parentIdTag.

- "StatusNotification" ex :

[2,"32978631724077548134","StatusNotification",{"connectorId":2,"errorCode":"NoError","info":"No   failure","status":"SuspendedEVSE","vendorId":"Legrand"}]

- "StopTransaction" ex :

[2,"95499847395981752639","StopTransaction",{"idTag":"XXXXXXXXX","meterStop":16,"timestamp":"2019-04-19T16:28:21.917+02:00","transactionId":XXXXXXXXXX,"reason":"Local","transactionData":[{"timestamp":"2019-04-19T16:28:21.917+02:00","sampledValue":[{"value":"1.40","context":"Interruption.End","format":"Raw","mesurand":"Current.Import","unit":"A"},{"value":"2.8147619","context":"Interruption.End","format":"Raw","mesurand":"Energy.Active.Import.Interval","unit":"Wh"}]}]}]

IdTagInfo support expiryDate and parentIdTag.

The supported OCPP 1.6J functions (Server to charging station) are:
  - "CancelReservation" : available ;
  - "ChangeAvailability" : available ;
  - "ChangeConfiguration" : available ;
Check the chapter "Configuration".
  - "ClearCache" : available ;
  - "ClearChargingProfile" : available ;
  - "DataTransfer" : not available ;
  - "GetCompositeSchedule" : available ;
  - "GetConfiguration" : available ;
Check the chapter "Configuration".
  - "GetDiagnostics" : available ;
  - "GetLocalListVersion" : available ;
  - "RemoteStartTransaction" : available ;
  - "RemoteStopTransaction" : available ;
  - "ReserveNow" : available ;
  - "Reset" : available ;
  - "SendLocalList" : available ;
  - "SetChargingProfile" : available ;
  - "TriggerMessage" : available ;
  - "UnlockConnector" : available ;
  - "UpdateFirmware" : available ;

Configurations possibilities :

CORE PROFILE	OCPP 1.6	READ	WRITE	BY DEFAULT	REMARKS
AllowOfflineTxForUnknownId	Optional	OK	Accepted	False	
AuthorizationCacheEnabled	Optional	OK	Accepted	False	
AuthorizeRemoteTxRequests	Required	OK	Accepted	True	
BlinkRepeat	Optional	OK	Accepted	60	No action on Legrand station
ClockAlignedDataInterval	Required	OK	Accepted	0	No action on Legrand station
ConnectionTimeOut	Required	OK	Accepted	60	60sec by default
GetConfigurationMaxKeys	Required	OK	N.A.	255	
HeartbeatInterval	Required	OK	Accepted	60	Between 10 and 86400 sec
LightIntensity	Optional	OK	Rejected	100	No action on Legrand station
LocalAuthorizeOffline	Required	OK	Accepted	False	
LocalPreAuthorize	Required	OK	Accepted	False	
MaxEnergyOnInvalidId	Optional	OK	Rejected	0	
MeterValuesAlignedData	Required	OK	Accepted		Please check "supportedMeterValuesAlignedData"
MeterValuesAlignedDataMaxLength	Required	OK	Rejected	50	
MeterValuesSampledData	Required	OK	Accepted		Please check "supportedMeterValuesSampledData"
MeterValuesSampledDataMaxLength	Optional	OK	Rejected	50	
MeterValueSampleInterval	Required	OK	Accepted	30	- 10 s
MinimumStatusDuration	Optional	OK	Accepted	0	
NumberOfConnectors	Required	OK	N.A.	0	Depend of the reference of the product
ResetRetries	Required	OK	Accepted	1	
ConnectorPhaseRotation	Required	OK	Not supported	Unknown	No action on Legrand station
ConnectorPhaseRotationMaxLength	Optional	OK	N.A.	1	No action on Legrand station
StopTransactionOnEVSideDisconnect	Required	OK	Accepted	True	No action on Legrand station
StopTransactionOnInvalidId	Required	OK	Accepted	False	

CORE PROFILE	OCPP 1.6	READ	WRITE	BY DEFAULT	REMARKS
StopTxnAlignedData	Required	OK	Accepted		Please check "supported-StopTxnAlignedData"
StopTxnAlignedDataMax-Length	Optional	OK	N.A	10	
StopTxnSampledData	Require	OK	Accepted		Please check "supported-StopTxnSampledData"
StopTxnSampledDataMax-Length	Optional	OK	N.A	10	
SupportedFeatureProfiles	Required	OK	N.A	Core,FirmwareMan-agement, LocalAuth-ListManagement,Re-moteTrigger,Reserva-tion,SmartCharging	
SupportedFeatureProfiles-MaxLength	Optional	OK	N.A	6	
TransactionMessageAt-tempts	Required	OK	Accepted	3	
TransactionMessageRetryIn-terval	Required	OK	Accepted	10	
UnlockConnectorOnEVSide-Disconnect	Required	OK	Accepted	True	No action on Legrand station (always true)
WebSocketPingInterval	Required	OK	Accepted	300	No action on Legrand station
SupportedFileTransferProto-cols	Required	OK	OK	FTP, SFTP, FTPS, HTTP, HTTPS	

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LOCAL AUTH LIST MANAGEMENT PROFILE	OCPP 1.6	READ	WRITE	BY DEFAULT	REMARKS
LocalAuthListEnabled	Required	OK	Accepted	False	
LocalAuthListMaxLength	Required	OK	N.A	500	
SendLocalListMaxLength	Required	OK	N.A	500	

RESERVATION PROFILE	OCPP 1.6	READ	WRITE	BY DEFAULT	REMARKS
ReserveConnectorZeroSupported	Optional	OK	N.A	True	

SMART CHARGING PROFILE	OCPP 1.6	READ	WRITE	BY DEFAULT	REMARKS
ChargeProfileMaxStackLevel	Required	OK	N.A	100	
ChargingScheduleAllowedChargingRateUnit	Required	OK	N.A	Current,Power	
ChargingScheduleMaxPeriods	Required	OK	N.A	100	
ConnectorSwitch3to1PhaseSupported	Optional	OK	N.A	False	
MaxChargingProfilesInstalled	Required	OK	N.A	100	

| LEGRAND PROFILE	OCPP 1.6	READ	WRITE	BY DEFAULT	REMARKS
chargingStationMaxLimit	N.A	OK	OK	64	
confBasicTime	N.A	OK	OK	10	
confAuthorizeTime	N.A	OK	OK	20	
confBottNotificationTime	N.A	OK	OK	30	
defaultIdTag1	N.A	OK	OK	LEGRAND001	
defaultIdTag2	N.A	OK	OK	LEGRAND002	
MaxCurrentInstallationRight	N.A	OK	N.A		Allows to know the maximum limit of the installation
MaxCurrentInstallationLeft	N.A	OK	N.A		Allows to know the maximum limit of the installation
MaxCurrentCableRight	N.A	OK	N.A		Allows to know the maximum limit of the charging cable used
MaxCurrentCableLeft	N.A	OK	N.A		Allows to know the maximum limit of the charging cable used
MeterType	N.A	OK	N.A	Internal	"Internal" or "external" (external under delopment)
networkEthernetAddress	N.A	OK	N.A		
networkEthernetNetmask	N.A	OK	N.A		
networkEthernetGateway	N.A	OK	N.A		
networkWiFiAddress	N.A	OK	N.A		
networkWiFiNetmask	N.A	OK	N.A		
networkWiFiGateway	N.A	OK	N.A		
oCPPPlugAndCharge	N.A	OK	OK	False	
serverReconnectionTime	N.A	OK	OK	30	
UID	N.A	OK	OK	Null	
URL	N.A	OK	OK	Null	

To know more,
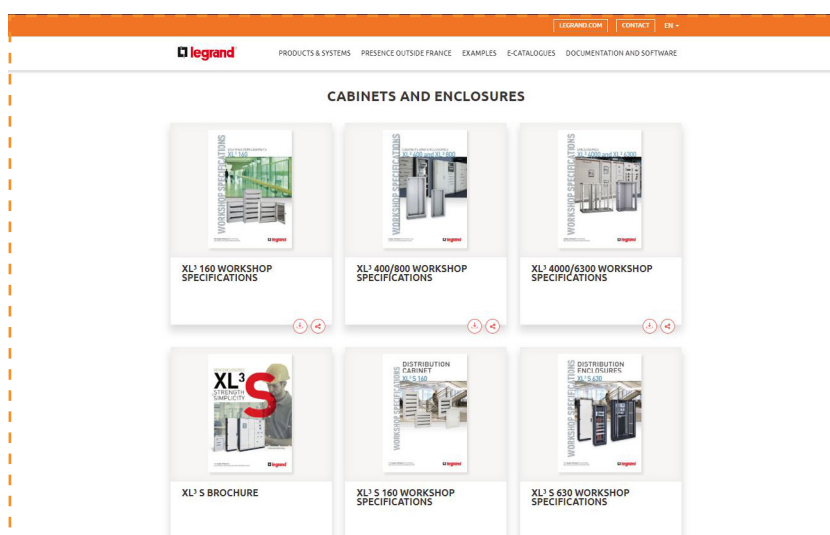## check **export.legrand.com**

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All technical data of the products inside this user guide are available on :
www.legrand.com/ecatalogue/

>Click on >Library of documents
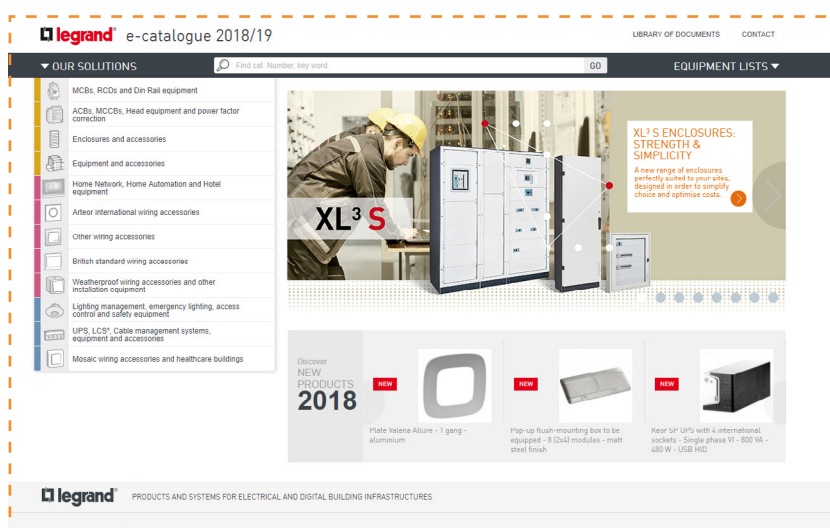
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