

Usage Manual



EKEPC3 Charging Pile OCCP-1.6J protocol controller

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Thank you for choosing EKEPC3 Charging Pile OCCP-1.6J protocol controller. Please read this manual before installation, operation and maintenance.

Overview

This product is a OCCP-1.6J protocol verified AC Charging Pile Controller which can connect to your APP or background remote platform by using WIFI, 2G/4G, Ethernet and many other network communications. And also The local setting of this product has a variety of customized intelligent charging solutions such as intelligent charging and appointment charging.

Because of the advantages which include energy saving, environmental protection, easy to use, high degree of intelligence, this product can be applicated widely and reliable in safety.

Power supply: AC 170V-260V 50Hz,
power consumption $\leq 3W$.

Operating temperature range: -25~55 degrees;

Relative humidity: < 95%;

Height: 2000 m;

Instruction for using

1.1 About the manual

The Instructions contain all the information needed for debugging and using the controller.

Validity range of this manual

This manual is valid for all parts of the charging pile controller.

This product is based on international standards IEC61851 and SAEJ1772.

Note: SAEJ1772 is a standard for electric vehicle chargers proposed by the Society of Automotive Engineers.

1.2 Recycle and treatment

The material of the controller has environmental compatibility and can be recycled. In order to meet the environmental protection requirements, please contact a certified professional company that specializes in handling such waste to deal with electronic waste.

The instruction manual for OCPP-1.6J protocol controller of electric vehicle charging pile

Safety Instruction

2.1 Precautions and hazards

Note: please follow the safety instructions and legal guidelines.

Due to the different installation requirements in different countries and regions, the installation personnel are responsible for ensuring that the product installation can meet the local legal requirements.

Danger: voltage hazard

Contact with live components will cause serious injury. Please cut off the power supply of all systems and devices before operation.

2.2 Fuse

Warning: improper fusing may cause heat or fire

The internal self-resetting fuse is only used to protect the controller, and the installation personnel are responsible for the safety of the circuit.

2.3 Repair

It is not allowed to repair, and the defective device shall be disposed (abandoned) under the condition of meeting the environmental protection requirements.

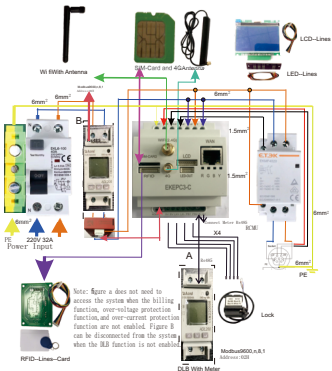
Warning: opening the device without permission can cause danger

Opening the device without permission may cause harm to the user or cause significant damage or property loss.

Note: if the device is changed in violation of regulations, the manufacturer's warranty will be invalid. Any unauthorized changes will void the warranty.

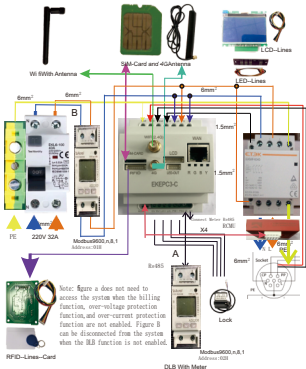
The instruction manual for OCPP-1.6J protocol controller of electric vehicle charging pile

Wiring diagram of single phase 32A



The instruction manual for OCPP-1.6J protocol controller of electric vehicle charging pile

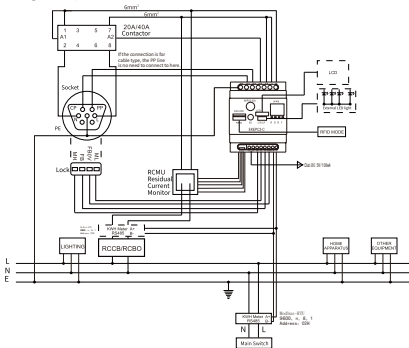
PEN Disconnection Protection System



The instruction manual for OCPP-1.6J protocol controller of electric vehicle charging pile

Single Phase

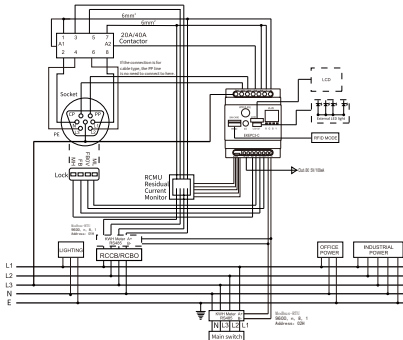
Wiring example 230V AC



The instruction manual for OCPP-1.6J protocol controller of electric vehicle charging pile

Three Phase

Wiring example 400V AC



The instruction manual for OCPP-1.6J protocol controller of electric vehicle charging pile

Guidence of EKEPC3(OCCP1.6J)controller

1.Boot distribution network

1.1.1 Connect to the power supply and start up, then swipe the dedicated card for network configuration to help the WIFI signal to be available to link by device. If the card is lost, please contact to the manufacture to replace the card.

1.1.2 IC card supported by this controller: contactless IC card, 13.56MHz, M1 with protocol ISO14443A standard, IC-UID\IC-CUID\IC-FUID\IC-UFUID, etc.

1.1.3 For card which is released by our company, The TagID is already written when it was produced. The number of TagID will be marked on the card (with 9-digit decimal).

1.1.4 For card which is set by yourself, the RFID module will read the serial number which is solidified in card as the TagID number (with 8-digit hexadecimal).

1.1.5 If you used the RFID function on your controller, then you need to add the TagID at local device or the background platform of OCCP operation according to the require, to help you add TagID into your list.



TagID

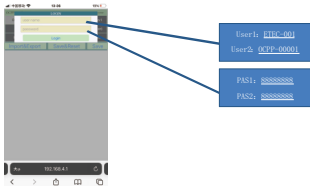
Swipe the card



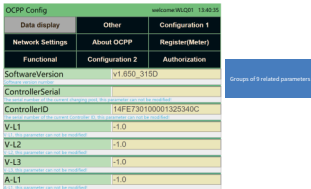
1.2 Use a device that can receive wireless network signals (such as a mobile phone or laptop) to search for wireless LAN (name: OCPP_XXXX password: 88888888) and connect to it.



1.3 Open the browser, type the IP address 192.168.4.1 to enter the login page.



1.4 Enter the parameter setting interface of the local web page.



2. The setup instruction of local web page

The Main menu group options of local web page

OCPP Config welcome:WLQ01 18:32:03		
Data display	Other	Configuration 1
Network Settings	About OCPP	Register(Meter)
Functional	Configuration 2	Authorization

Step 1: Set the information about the Controller

Configuration 1

ZoneChange	<input type="text" value="0"/>	
<small>Please enter the time difference between your region and the region of ocpp platform</small>		
ChargepointVendor	<input type="text" value="ETEC"/>	
<small>Set by charge point manufacturer, not by controller manufacturer. Sent as ChargePointSerialNumber in OCPP BootNotification. If not set, the OCPP message value is replaced by the ChargePointIdentify value</small>		
ChargePointModel	<input type="text" value="EKEPC3"/>	
<small>Mandatory, identifies the model of the ChargePoint. Please note that this must not match a different model of the generation of charge controllers</small>		
WrittenOfferAddress	<input type="text" value="China Zhejiang Wenzhou"/>	
<small>Configures the postal address part of the written offer that the user can write in order to request the GPL software. (Multiple lines can be separated by commas.)</small>		
ChargePointType	<input type="text" value="Home"/> -	
<small>Chargepoint mode</small>		
ChargePointConnectionMode	<input type="text" value="Master"/> -	
<small>Connection mode of Chargepoint</small>		
Import&Export	Save&Reset	Save

If the time is different between the final platform you connected and your local place, please enter the time difference here.
This text is allowed to change.

This text is allowed to change.

This text is allowed to change.
If your charging pile is not connected to a network or back-end APP. Please select this option as: Home, otherwise it will be public.
Select the controller's work mode: Master or Slave

If the parameters are completed, please click this button.

Step2: set up the network system you are going to access

AccessEthernet	Enable	-
<small>Access Ethernet</small>		
AccessWifi	Enable	-
<small>Access Wifi</small>		
AccessSIM	Enable	-
<small>Access SIM</small>		
LanAutoDhcp	Enable	-
<small>Lan Auto Dhcp</small>		
StaticIPAddress	192.168.0.111	
<small>Static IP</small>		
SubnetMask	255.255.255.0	
<small>Subnet Mask</small>		
DefaultGateway	192.168.0.1	
<small>Default Gateway</small>		
SSID		
<small>Please enter the name of the wireless network you are connecting to!</small>		
WifiPassword		
<small>Please enter the Password for the wireless network you will be connecting to!</small>		
4gOperators		
<small>Please enter the name of the operator of the 4G network you will be connecting to correctly.</small>		
Import&Export	Save&Reset	Save

Network Settings

If the parameters are completed, please click this button.

Step 3: Set up the parameters about OCPP background's connection.

BackendUrl	WSS://	
<small>Please input the URL address of the ocpp platform you want to connect correctly!</small>		
MeterValueSampleInterval	500	:
<small>OCPP MeterValueSampleInterval(1H5s)</small>		
ClockAlignedDataInterval	3600	:
<small>ClockAlignedDataInterval(s)</small>		
HeartbeatInterval	900	:
<small>HeartbeatInterval(s)</small>		
AuthorizeRemoteTxRequests	ON	-
<small>AuthorizeRemoteTxRequests</small>		
OcppChangeAvailability	ON	-
<small>OcppChangeAvailability</small>		
Import&Export	Save&Reset	Save

About OCPP

Enter the Url of OCPP background which you want to access at here. Both WS link or WSS link are available to use.

When you choose ON: Only at the situation when the charging pile without network and OCPP background is not available to authorize. If the TagID you used can not be found on the local list, but the device has your using record, it will find the TagID in the cache. When both two match then the charging will be available to start.

If the parameters are completed, please click this button.

Step 4: Set the register address for accessing to the meter.

Illustrate: All ammeters with the following functions are supported: 1) RS485 communication interface, communication protocol: Modbus-RTU.9600,n, 8, 1. 2) The address of the electricity meter is set as 01H(electricity meter for metering) and 02H (total circuit meter for current collection for DLB function). 3) The data type of the required register is: 4-bit floating point.

Register Address V-L1	2304
-----------------------	------

V-L1, Please enter the register number of the corresponding data for the watt-hour meter with address 01H

Register Address V-L2	2306
-----------------------	------

V-L2, Please enter the register number of the corresponding data for the watt-hour meter with address 01H

Register Address V-L3	2308
-----------------------	------

V-L3, Please enter the register number of the corresponding data for the watt-hour meter with address 01H

Register Address A-L1	2310
-----------------------	------

A-L1, Please enter the register number of the corresponding data for the watt-hour meter with address 01H

Register Address A-L2	2312
-----------------------	------

A-L2, Please enter the register number of the corresponding data for the watt-hour meter with address 01H

Register Address A-L3	2314
-----------------------	------

A-L3, Please enter the register number of the corresponding data for the watt-hour meter with address 01H

Register Address W	2322
--------------------	------

Power(W), Please enter the register number of the corresponding data for the watt-hour meter with address 01H

Register Address Khw	2332
----------------------	------

Kwh, Please enter the register number of the corresponding data for the watt-hour meter with address 01H

Register Address DLB-A	2310
------------------------	------

DLB-A, Please enter the register number of the corresponding data for the watt-hour meter with address 02H

Set Zero	
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Zero clearing of watt-hour meter

Import&Export	Save&Reset	Save
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If this is an ADL400 meter, enter 2304, 2306, 2308, 2310, 2312, 2314, 2322, 2332, 2310. If the SDM63 type 0 meter is entered: 0, 2, 4, 6, 8, 10, 52, 342, 10. For other types of meters, please refer to the instruction manual of the meter you selected.

If the parameters are completed, please click this button.

Functional

Step 5: Set the button for functions related to the charging pile.

DlbFunction	Enable
DLB function on or off	
RcmuFunction	Enable
Select the access status of rcmu (6mA) module. When the rcmu protection module is connected to the charging point, this function needs to be enabled, otherwise it is prohibited to use.	
LockFunction	Disable
Socket lock function in case of auxiliary/output to support additional Schuko Socket	
RfidFunction	Enable
Enables or disables the RFID reader. Allows preventing error messages if no reader is installed.	
TagIDFunction	Disable
If Disable is selected, RFID reads the TagID number of the factory configured IC card. If you choose to enable the RFID module, the serial number on your IC card will be read, which is an unchangeable TagID.	
VoltageMonitoringFunction	Enable
Enables monitoring of over- and undervoltage on mains. Requires an OCPP meter providing voltage readings.	
CheckCarOverloadFunction	Enable
If set to On the current consumed by the vehicle will be checked against the signaled current. If the overload is above 10% the signaled current will be decreased by 10%. If the overload is above the configured percentage limit the charging will be stopped.	
StopTransactionMode	IC Card/Pull Charging Plug

If your charging pile doesn't have RFID module installed, please disable this function.

If the IC card you use is released by our company, select Disable this area. If the IC card you use is blank, select Enable this option.

If you charging pile have a meter installed, please enable this function.

If you charging pile have a meter installed, please enable this function.

This allows to modify the behavior of the charger at the end of a transaction. Normal unlocks and stops the transaction, when the plug is removed from the vehicle or the RFID used for authorization is used again. Stop after unplugging causes a transaction to be fully stopped only when the cable is pulled from the socket of the charging station. Only by RFID/Remote Stop only unlocks if RFID or a backend message is used for stopping the transaction. Pulling the cable out of the car will not end the transaction.

RestartTransactionAfterPowOFF	-	
Enable if a transaction that was interrupted by a power loss shall be continued once the power is restored. If disabled the authorization needs to be done again by the user and the new transaction will be started.		
Pause/preventChargingInSt ON	-	
If set to On, charging transactions are paused in case State D is detected. While state D is detected an error is reported to the user.		
SendErrorStatusNotification ON	-	
This parameter determines whether OCPP status notifications that are meant to report and error (such as when the plug locking system is broken) should be sent to the backend system or not.		
StartTime	00:00	
Start Charging time		
EndTime	00:00	
End Charging time		
ReservationCharging	OFF	
Reservation charging On and Off		
LCD1602	OFF	
If your LCD liquid crystal display is LCD1602, turn this switch on		
DelayStart	OFF	
Random delay start function, this switch on the charging post is not immediately start charging, but according to the system will generate a random time delay start charging.		
DelayMaxTime(s)	600	
Set a maximum delay time.		
Import&Export	Save&Reset	Save

If you turn on the reservation function: the charging pile is correctly connected to the car swipe card to start the charging can not start charging immediately, but start charging in the time area you set, and the charging pile will automatically stop charging after reaching the end time you set.

If you are connecting an LCD monitor that is 1602J (0.9 inches), select this option to ON status, otherwise select OFF status.

If the delay/start function is on, it will not start to charge at soon when the charging pile authorized. But start to charge after random delay (in 600s).

If the parameters are completed, please click this button.

Step 6: Set the relevant configuration parameters of the charging pile

Configuration 2

Cable/Socket	Cable	-
<small>Setting this to on indicates that the charger has a fixed cable attached and does NOT need to lock a cable in a socket. ATTENTION: This is safety relevant!</small>		
PhasesConnectedToChargeP	1P+N	-
<small>Configures the number of phases connected to the ChargePoint.</small>		
TempCalibration	-50	
<small>Temperature coefficient correction, how much difference minus X10</small>		
MaximumOutputCurrent(A)	32	
<small>Maximal current (in Ampere) of the ChargePoint.</small>		
OperatorCurrentLimit(A)	32	
<small>Operator Current Limit (in Ampere) of the ChargePoint.</small>		
InstallationMaximumCurren	32	⋮
<small>Installation Maximum Current (in Ampere) of the Main site, Building or home.</small>		
DlbMaxCurrent(A)	45	
<small>Enter: Enter the maximum protection current for the DLB function</small>		
MaximumVoltage(V)	265	
<small>Pause charging when voltage surpasses this threshold</small>		
HighVoltageHysteresisThre	250	
<small>When recovering from a high voltage error, assure the voltage is below this threshold for more than 60 seconds before resolving the error state and allowing charging.</small>		
MinimumVoltage(V)	180	

When the display temperature of the charging pile and the actual temperature value are different, the displayed value can be corrected. e.g. when the measured temperature is 25.5 degrees, the displayed temperature is 30.8 degrees, enter -53 here.

Pause or do not allow charging when the voltage drops below this threshold		
LowVoltageHysteresisThres	200	
When recovering from a low voltage error, ensure that the voltage is above this threshold for more than 60 seconds before resolving the error state and allowing charging.		
StopLimitIn(%)	120	
When the charging current reported by the OCPP meter exceeds the signaled current by this percentage, charging will be stopped.		
TemperatureThreshold1	70	
Temperature threshold necessary to start decreasing the current.		
ChargingCurrentToReduce	10	
Charging current value in Ampere when temperature is above temperature threshold 1.		
TemperatureThreshold2	85	
Temperature threshold necessary to stop charging.		
ContactorLifetime	30000	
Maximum number of operating cycles the contactor should be allowed to perform until a replacement is necessary.		
PlugLifetime	10000	
The maximum number of times the plug of the type2 socket can be plugged in safely.		
Import&Export	Save&Reset	Save

If the parameters are completed, please click this button.

Step 7: Set up the pre-authorization aspect

Authorization

EnableLocalWhitelist	Enable
Local whitelist of RFID's independent of a backend connection	
OcppWhitelistExpiryMode	Disable
The assumed expiry date of cache entries when OCPP expiry date has not been set explicitly by the backend. The default setting for such cache entries is the largest allowable system time: 2038	
LocalEhelistLearningMode	
If enabled, every tag swiped over the RFID reader will be added to the local whitelist. If no tags are swiped for 5 minutes the feature is deactivated. Note that this parameter is not persistent	
InsertWhitelist	
Insert whitelist data into the local device	
SearchWhitelist	
Look for whitelist data on local devices	
DeleteLocalWhitelist	
If you press this button, you will be the device to save the white list all data deleted	
ClearCache	
If you press this button, you will be the device to clear cache all data deleted	
IfInDoubtAllowCharging	OFF
This parameter determines whether a client is allowed to charge in case its authorization cannot be processed because the backend is offline or not reachable. If set to ON, the client is allowed to charge even if it cannot get authenticated from the	
LocalPreAuthorize	OFF

If this option enabled, it will search the all lists of the local device list to check whether the same TagID number is or not.

If this option enabled, The TagID number which pre-authorized will be released by the OCPP background.

If you click here, the TagID which will be read within 60s by swiping RFID module can be added to the local list.

Enter the TagID you want to add here then click the button on the left if it's correct, it will be entered to your local list.

If you click the button here, your previous charging TagID will be deleted.

If you have enabled the option to allow charging offline, please turn this parameter ON.

When you select it as ON, it will allow to charge if the TagID you used is found in local list.

Sets if the Charge Point, when online, will start transactions for locally authorized identifiers without requesting an Authorize.conf from the Central System

LocalAuthorizeOffline OFF

Sets if the Charge Point, when offline, will start transactions for locally authorized identifiers

DisallowChargingIfOcppQueueFull ON

When set, a full OCPP message queue will cause an error state. Charging will be terminated

FreeCharging ON

Allows charging without authorization via RFID or the backend. Charging is started immediately after a vehicle is connected.

AuthorizationCacheEnabled ON

AuthorizationCacheEnabled

SimulateSwipeCard

Please enter the card number of the simulated swipe card

Import&Export **Save&Reset** **Save**

When the ON is selected, it still allow to start to charge if the network disconnect. The all charging records will be saved in local device (maximum to 10,000 records) until reconnect to the network and background. The local device will upload the all charging records which upload offline then clear them up.

If you forget to take a IC card but you remember your IC card number, just enter the TagID number here and click the button on the left. The device will consider that you have swiped the card, and access to pre-authorization process.

If the parameters are completed, please click this button.

Step 8: Other

Other

FirmwareUpdateUrl	<input type="text"/>
<small>Please enter the URL address of the firmware you want to update</small>	
RestoreFactorySettings	<input type="text"/>
<small>Restore factory settings</small>	
ResetDevice	<input type="text"/>
<small>Reset Device</small>	
SoftwareReboot	<input type="text"/>
<small>Software reboot</small>	
ManufacturerName	WLQ01
<small>Admin Name</small>	
Manufacturer password	*****
<small>Admin Password</small>	
OperatorName	ETEC-001
<small>Operator Name</small>	
OperatorPassword	<input type="text"/>
<small>Operator Password</small>	
UserName	OCPP-00001
<small>User Name</small>	
UserPassword	<input type="text"/>
<small>User Password</small>	
LogPassword	<input type="text"/>
<small>Set the password for the downloadable log zip file</small>	
Import&Export	Save&Reset
Save	

If necessary, please update the firmware, enter the URL here, then click the button on the left, the device will download the firmware automatically. Please be aware, if the device is on charging, the upload will start automatically after the charging ends. It will restart the device when the upload succeeds.
E.g: http://tb1.tpddns.cn:6002/binFile/OCPP_en.bin

If you forget it, please contact to the manufacturer.

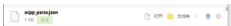
If the parameters are completed, please click this button.

Step 9: Complete the configuration then click this button, the device will save the all datas and restart itself.

Save&Reset

Step 10: Complete the configuration, save your recipe file for the next to use.

```
[{"_setTimeZone", "0"}, {"_devName", "ETECC"}, {"_ro_model", "EKEPC3"}, {"_devAddress", "China Zhejiang Wenzhou"}, {"_b_Home0rPublic", "0"}, {"_b_Slave", "0"}, {"_b_RJ45", "1"}, {"_b_Wifi", "0"}, {"_b_4G", "1"}, {"_b_DHCP", "1"}, {"_setIP", "192.168.0.111"}, {"_setMask", "255.255.255.0"}, {"_setGateway", "192.168.0.1"}, {"_ssid", "ETECC7777"}, {"_apn", ""}, {"_url", ""}, {"_AddrModbus_0", "2304"}]
```



Export the file on your PC's desktop

3. Import your recipe file and have a quick configuration of the parameters.

```
[{"_b_Slave", "0"}, {"_b_RJ45", "1"}, {"_b_Wifi", "0"}, {"_b_4G", "1"}, {"_b_DHCP", "1"}, {"_setIP", "192.168.0.111"}, {"_setMask", "255.255.255.0"}, {"_setGateway", "192.168.0.1"}, {"_ssid", "ETECC7777"}, {"_apn", ""}, {"_url", ""}, {"_AddrModbus_0", "2304"}]
```

Select the configuration file you saved (ocpp_params.json) and open it.

Import the configuration file on your desktop.

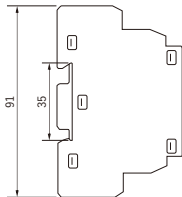
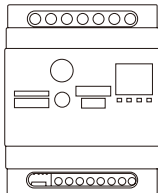
Click this button to confirm your action.

3. The EKEPC3 controller indicator and LCD display guide

State	Blue	Green	Red	Yellow	LCD
Starting	Slow flash				Strating up...
Local Web page settings	Fast flash				
Firmware upgrade	Draw Marquee				Firmware update...XXX%
No vehicle connected				Bright	Available XX kW
Vehicleconnected				Breathe fast	Vehicle not Connected
OCPP background communication is not smooth				Fast flash	Please Authorize...
The permission has been denied by the backend				Slow flash	Charging for: hh:mm "xxx kWh"
No orders, stand by OCPP state A		Bright			Available XX kW
<small>Swipe or start remotely The authorization is normal but the vehicle is not connected</small>		Breathe fast			Vehicle not connected
<small>Wait for authorization Connected vehicle OCPP state B</small>		Slow flash			Please Authorize...
The order was successfully launched	Breathe fast				Charging for: hh:mm "xxx kWh"
Ventilation is required			Slow flash		Required Ventilation

CP short-circuit abnormality			Bright		Check CP line
The diode is short-circuited					Check Socket
The PP cable is not connected					Check PP line
Lock fails to turn on or off					Lock error/Unlockerror
DLB protection					Check DLB
RCMU protection					Check RCMU
Over-under voltage protection					Check voltage
Overcurrent protection					Check current
The charging pile temperature is too high abnormal			Bright fast		Temperature too high
Without network communication					Icon or E/W/G
Without OCPP background					Icon or 0

4、 Dimensional drawings(mm)



Firmware
download
link 1



APP link 1



Firmware
download
link 2



APP link 2