CYGNUS electronics

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Smart Amp-Sync
Travel EV Charger

Instruction Manual of 11KW

Smart Amp-Sync Universal Travel EV Charger

Smart Amp-Sync ™
for Overcurrent and Overheat Protection

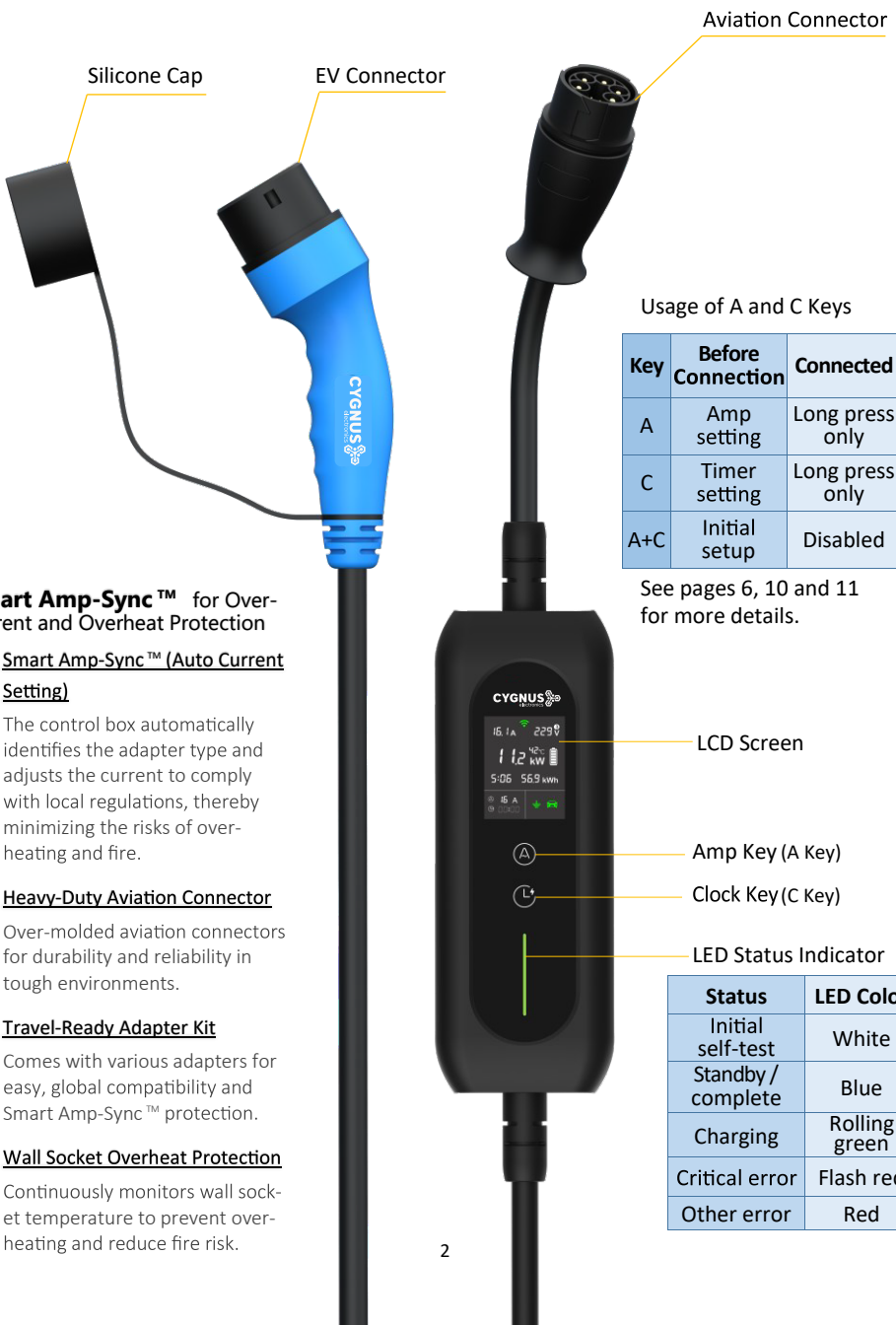
- ✓ Smart Amp-Sync ™ (Auto Current Setting)
  The control box automatically identifies the adapter type and adjusts the current to comply with local regulations, thereby minimizing the risks of overheating and fire.
- ✓ Heavy-Duty Aviation Connector
- ✓ Travel-Ready Adapter Kit
- ✓ Wall Socket Overheat Protection

Please see the detail in page 2

CE -25 PE

Rev. 20251027

Overview



Smart Amp-Sync™ for Over-current and Overheat Protection

- ✓ Smart Amp-Sync™ (Auto Current Setting)

  The control box automatically identifies the adapter type and adjusts the current to comply with local regulations, thereby minimizing the risks of over-heating and fire.

- ✓ Heavy-Duty Aviation Connector

  Over-molded aviation connectors for durability and reliability in tough environments.

- ✓ Travel-Ready Adapter Kit

  Comes with various adapters for easy, global compatibility and Smart Amp-Sync™ protection.

- ✓ Wall Socket Overheat Protection

  Continuously monitors wall socket temperature to prevent overheating and reduce fire risk.

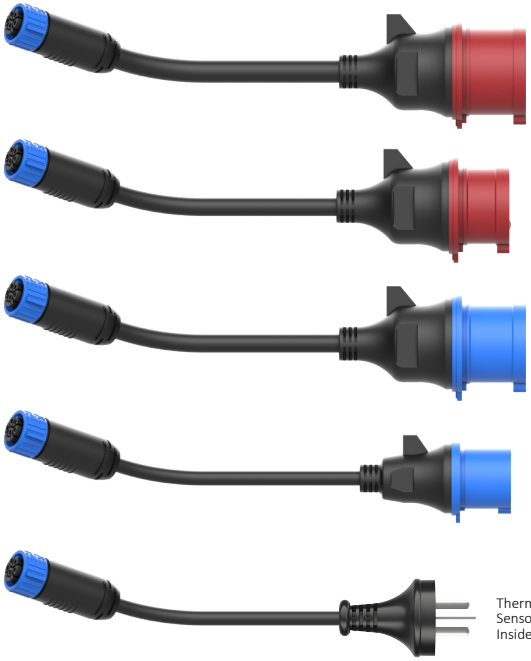
Usage of A and C Keys

Key	Before Connection	Connected
A	Amp setting	Long press only
C	Timer setting	Long press only
A+C	Initial setup	Disabled

See pages 6, 10 and 11 for more details.

Status	LED Color
Initial self-test	White
Standby / complete	Blue
Charging	Rolling green
Critical error	Flash red
Other error	Red

Universal Power Adaptor



AS3-32A3P

CEE 32A Plug 3-Phase Adaptor, 0.2 M

- Rated Current: **32 A**
- Power Output: 11 kW (M2-11T)
  22 kW (M2-22T)

AS3-16A3P

CEE 16A Plug 3-Phase Adaptor, 0.2 M

- Safe Charging Current: **16 A**
- Power Output: 11KW

AS3-32A1P

CEE 32A Plug 1-Phase Adaptor,0.2 M

- Rated Current: **32 A**
- Power Output: 3.68 kW(for M2-11T)
  7.36 kW(for M2-22T)

AS3-16A1P

CEE 16A Plug 1-Phase Adaptor, 0.2 M

- Safe Charging Current: **16 A**
- Power Output: 3.68 kW

AS3-AR10A

Adaptor Argentina Plug , 0.2 M

- Safe Charging Current: **10 A** (derated)
- Power Output: 2.2 kW

Welcome

Welcome to Your Smart Amp-Sync Travel EV Charger

Before embarking on a seamless and efficient charging experience with our product, we invite you to read these essential safety guidelines. Our goal is to ensure your safety and the optimal performance of the charger.

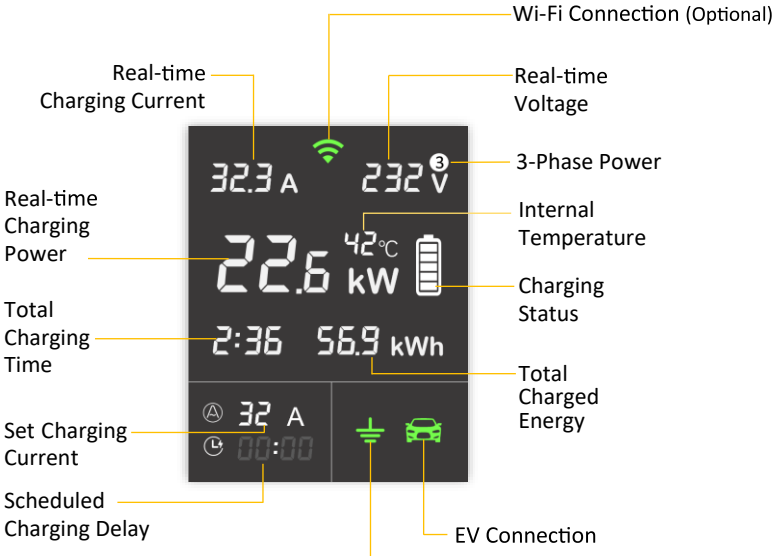
1. **Intended Use:** This charger is designed for charging EVs with identifier C as per the EN 17186 standard. Please use it as directed in this manual and your EV's manual to mitigate risks like electric shocks or fires.
2. **Routine Check:** Prior to each use, inspect the charger for any damage. Do not use the charger if the charger is damaged or cracked, to ensure your safety.
3. **Safe Handling:** Avoid touching live connector terminals with bare hands or metal tools. Ensure your hands are dry when operating the charger.
4. **Careful Treatment:** Protect the charger from being crushed under car wheels, doors, hoods, or heavy objects. Handle it gently to prevent potential damage. Refrain from pulling, throwing, or dropping the charger.
5. **Dry Conditions:** Store and use the charger away from water, oil, and other liquids. If the cable becomes wet, do not use it for charging. Avoid attempting to dry it with a hairdryer.
6. **Unplug Before Driving:** Always disconnect the charger from your EV before starting the engine to avoid any damage or risks.
7. **Clear of Obstructions:** If you detect foreign objects in the plug, remove them after disconnecting the power.
8. **Child and Pet Safety:** Keep the charger out of reach of children and pets for their safety.
9. **Direct Connection Only:** For safety and efficiency, avoid using adapters or extension cords with this charger.

Thank you for choosing our product. By following these guidelines, you can enjoy a safe and efficient charging experience.

Specifications

Model Number	CY-EV1-3P16A
Rated Voltage	230V AC 3-phase 50/60Hz
Rated Current	16A
Power	11kW
Degree of Protection	IP66
RCD Protection	Type B
Rated Residual Operating Current ($I_{\Delta n}$)	30mA, DC 6mA
Operating Temperature	–25°C to +45°C
Operating Altitude	up to 2000m

Control Box Screen Display



Status	Icon Color
Grounded	Green
Grounding Error	Red

Status	Icon Color
Ready to connect	White
Connected	Green
Connection error	Red

Initial Setup Guide ①

Welcome to your new charging experience! Before you embark on using your charger for the first time, we strongly advise that you thoroughly read this manual, understanding the key safety notes and initial setup process, and ensure compliance with the local regulations and directives.

Getting Started with Setup:

1. Accessing the Setup Interface:

- Press and hold both the Amp key (A key) and the Clock key (C key) for 3 seconds to enter the setup interface, as shown on the right.
- Then use the A key to **A**lter your options. Once selected, press the C key to **C**onfirm and proceed to the submenu settings.

Friendly Reminder

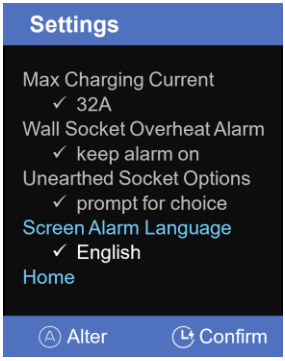
Please use the initial setting feature only when the charger is not connected to your EV. Note that once the charger is connected, the functionalities of a short press on either the A or C key, as well as the simultaneous press of both A and C keys, will be disabled to avoid any accidental interference with the charging process.

2. Smart Amp-Sync of Maximum Charging Current:

- The control box intelligently detects the power adapter type and automatically adjusts the maximum charging current.

Power Adaptor	Max Charging
	EV1-3P16A
CEE 32A 3-phase	16
CEE 32A 1-phase	16
CEE 16A 3-phase	16
CEE 16A 1-phase	16
AS3-AR10A	10

- For safety reasons, the maximum charging current cannot be manually adjusted, preventing setting errors and reducing the risk of overheating or fire hazards.

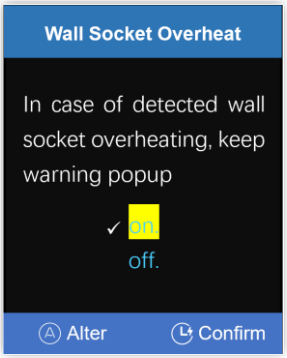


Important

Each country may have its own specific regulations or guidelines for the maximum charging current. It is strongly recommended to use your charger in accordance with local regulations and the specifications of your power supply circuit. This ensures that your charging process is safe and reliable.

3. Setting Up Wall Socket Overheat Alarm:
(Not applicable to CEE industrial plugs)

- The system automatically keeps the wall socket overheat alarm on at all times.
- This setting cannot be manually adjusted.



Friendly Reminder:

A built-in thermal sensor insides the household plugs monitors socket temperature, providing overheat protection by halting charging if the temperature exceeds 70°C. Charging resumes at a reduced current when the temperature drops below 60°C.

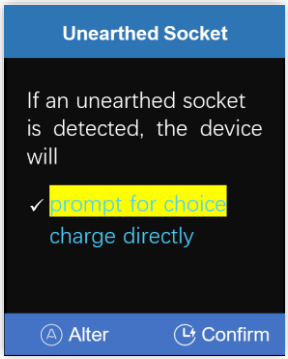
This feature is specific to household plugs only, excluding CEE industrial plugs.

Safety First

Ensure that your wall socket is capable of supporting the selected charging current. This is not only important for smooth operation but also to prevent the risk of overheating or, in extreme cases, fire.

Stay safe and charge responsibly!

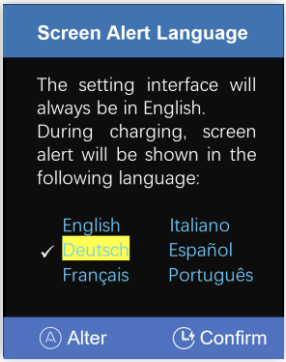
4. Setting Unearthed Socket Options:



- This option is mandatorily set to "**Prompt for choice**".
- Modification, deactivation, or user adjustment of this function is not permitted under any circumstances.

5. Setting Screen Alarm Language:

Select 'Screen Alarm Language' and enter the submenu as shown on the right. Use A key to **A**lter the choice, and C key to **C**onfirm.



Friendly Reminder:

This setting will only change the language of the screen alarm during charging, while the system settings interface will always remain in English.

Getting Started with Your Charger

Welcome to the world of efficient charging for your EV!

1. Powering Up:

Plug the charger into the power socket. The charger will automatically conduct a self-testing to ensure it's in perfect working order.

2. Setting the Charging Current:

Use the A key to select the charging current. Choose from 6A, 8A, 10A, 13A, 16A, 20A, 25A or 32A, based on the Smart Amp-Sync and EV's specifications. The LED indicator glows white during this process.

Note:

Your options for adjusting the charging current with the A key are limited by the Max Charging Current. For more information, please refer to the guide on page 7. You can use the A key to decrease the charging current, but it cannot be set higher than the Max Charging Current.

Friendly Reminder:

Your charger will remember the last current setting you used. Next time you power it up, it will automatically apply this setting for your convenience.

3. Connecting the Charger to Your EV:

Securely insert the EV plug into your EV’s charging port. The LED status light will turn green, and the grounding and EV icons on the display will also light up green, confirming a successful connection.

Charging will now begin!

Getting Started with Your Charger

Attention:

To ensure your settings remain secure, the A key is disabled once charging begins. For adjustments, you can perform a traditional off-line adjustment: disconnect the EV connector, set new current using the A key, and then reconnect.

Online Adjustment:

Our unique online feature streamlines setting adjustments. Even with your EV connected, just press and hold the A key for 3 seconds to enter online adjusting mode.

Then the flashing current value can be changed by short presses of the A key, and if untouched for 5 seconds, the new setting is automatically activated.

Note:

Once connected, only long press of the A or C keys is available, but short press and simultaneous press are disabled to avoid any accidental interference with the charging process.

Hold the A key for 3 seconds to enter **Online Adjustment** Mode

Scheduling Your Charging on Control Box

1. Powering Up:

Plug the charger into the power socket. It will automatically conduct a safety check to ensure it's in perfect working order.

2. Setting the Timer with the C key:

Schedule your night-time charging by setting the timer using the C key. Each press adds 30 minutes, up to 08:00, before resetting to zero.

Note:

The C key sets a delay for charging to start. For example, a 02:30 setting means charging will begin in 2 hours and 30 minutes, not at 2:30 AM.

3. Connecting the Charger to Your EV:

Once you plug the EV plug into your EV, the car icon on the screen turns green, the LED status indicator changes to blue, and the charger will start charging automatically after the set delay.

Important:

Please consult your EV's manual to verify if it accepts scheduled charging from the charger. Avoid using this feature with the EV models that can't be awakened by scheduled settings.

Important:

Please use either the EV's scheduling feature in its app or the charger's scheduling setting, but not both, to avoid any potential misalignment and charging failure.

Scheduling Your Charging on Control Box

Attention:

To prevent accidental changes, the C key becomes inactive once the EV connector is plugged in. To change your settings, you can conduct a traditional off-line adjustment: unplug from EV to adjust and re-plug the EV.

Online Adjustment:

Alternatively, hold the C key for 3 seconds to enter the online scheduling mode directly.

When the timer setting flashes, adjust it by short presses of the C key.

Without any action for 5 seconds, the flashing stops and the change takes effect.

Friendly Reminder:

With the online adjustment feature, you can not only change the scheduled charging time but also adjust to 00:00 to switch to immediate charging.

Hold the C key for 3 seconds to enter **Online Adjustment** Mode

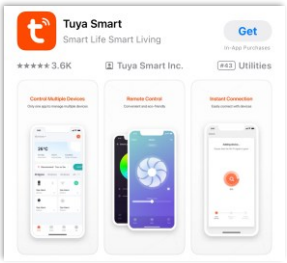
Installing Mobile App ①

The mobile app is only compatible with the Wi-Fi version of the EV charger. If you purchased the non-Wi-Fi version, please disregard this section.

If you've purchased an EV charger with Wi-Fi capabilities, please install "*Tuya Smart*" on your mobile phone to configure the charger remotely and monitor its charging status.

Tuya Smart is a safe and reliable mobile app developed and operated by Tuya Inc, a global leader in IoT platform solutions. Compatible with iOS, Android, and most other platforms, it's easy to install and ready for you to use with confidence.

Powered by tuya



Step 1: Install the App on Your Mobile phone:

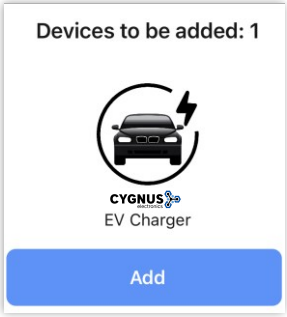
Open app store on your mobile phone, search for "Tuya Smart", tap "Get" button, install it on your mobile, and then launch the app.

Step 2: Connect the EV Charger to Power

Plug the charger into a power source, but DO NOT connect it to the EV. Once the control box completes its self-check, the Wi-Fi icon at the top center of the screen will blink blue, indicating that the charger has automatically entered pairing mode.

Alternatively, you can press and hold the 'A' key for 5 seconds to activate pairing mode. This will disconnect any previous pairings if the charger has already been paired with a phone.

Step 3: Pair Your Mobile phone with the EV Charger

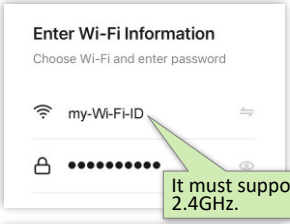


Keep your phone's Bluetooth on, launch *Tuya Smart* and bring your phone close to the EV charger. The main screen of the Tuya app will detect the charger as a device ready for connection. Alternatively, tap the "+" icon in the upper right corner, select "Add Device," and the app will automatically scan for nearby chargers. Tap "Add" and proceed with pairing.

Installing Mobile App ②

Step 4: Enter Wi-Fi Information

Choose your Wi-Fi name (SSID) and enter password.

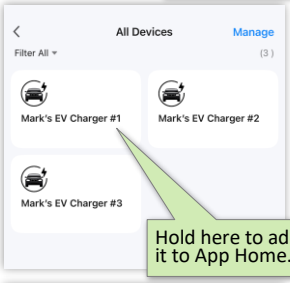


Important

To ensure the app runs smoothly without any lags, your EV charger should be connected to a strong and stable Wi-Fi signal. Please set your Wi-Fi SSID to **support 2.4GHz**, as this is required for the Tuya Wi-Fi module. It's recommended to enable both 2.4GHz and 5GHz for optimal performance. Configuring only 5GHz without 2.4GHz will result in Wi-Fi setup failure.

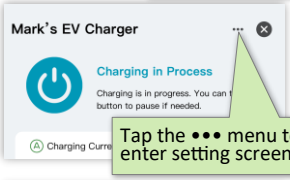
Step 5: Complete the Pairing Process

Follow additional prompts to complete the connection. Once done, the charger icon will appear on the app's home screen, as shown on the right.

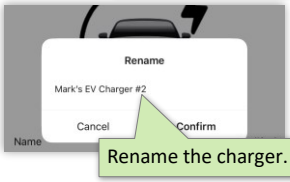


Step 6: Edit the Charger's Name

Launch the charger in Tuya Smart app by tapping the charger icon. In the top-right corner of the screen, tap the "•••" menu, then select the charger name to enter edit mode. You can then assign a custom name to your charger.



In the Tuya app, multiple chargers can be added, it is recommended to rename each one sequentially as #1, #2, and so on. Each charger is paired and controlled independently under its corresponding icon, and no cross-control is possible.



Friendly Reminder

A single EV charger can be paired to only one mobile phone as the host. The host has access to system settings and can share the app with family members as secondary users who can monitor and control the charger in the same way. You can remove the charger from the app on one mobile phone at any time and reinstall it on another phone as the host. Alternatively, you can press the A key on the control box for 3 seconds (without connecting the charger to the EV) to decouple the charger from your phone and re-enter pairing mode.

Using Mobile App to Control and Monitor Charging ①

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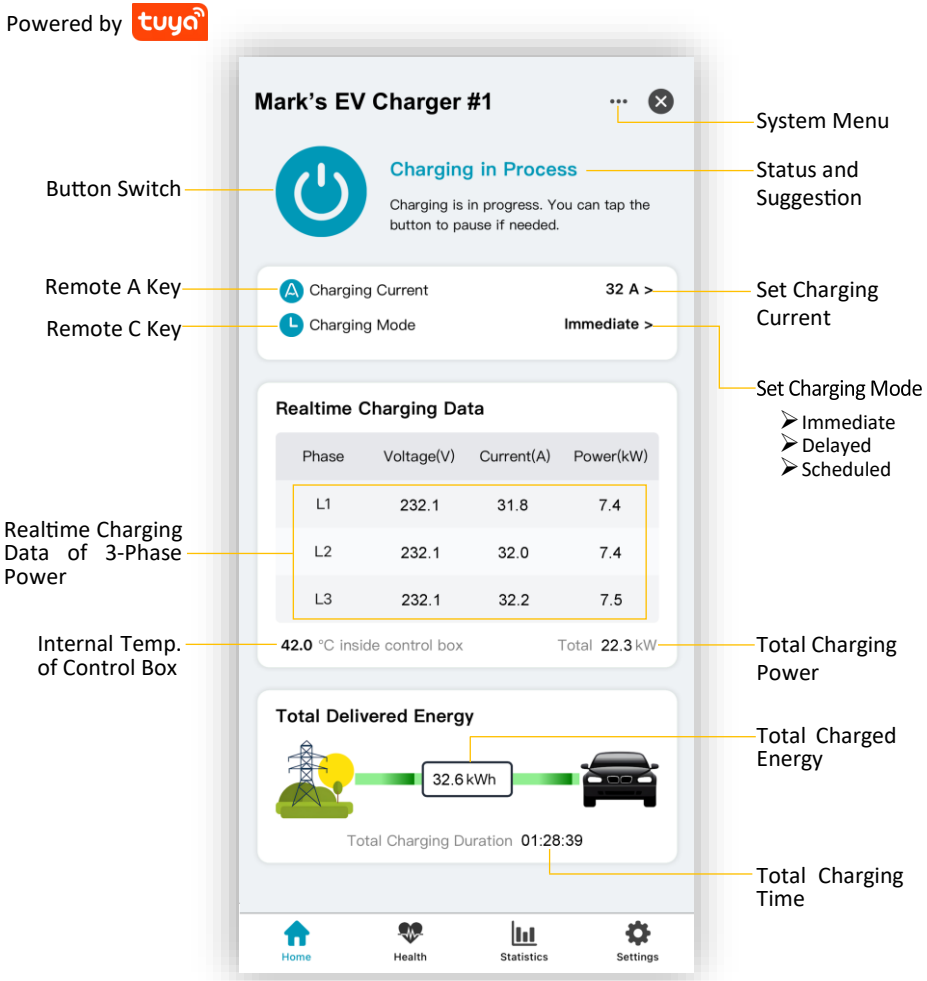


Icon	Status Bar	Color
	Off-Line Waiting for Connection with EV	Grey
	Waiting for Delayed Charging Waiting for Scheduled Charging Paused	Blue
	Ready to Charge Charging in Process Charging Complete	Blue

Icon	Status Bar	Color
	Leakage Protection Unearthed Socket Wall Socket Overheat Protection Control Box Overheat Protection Under/Overvoltage Protection Overcurrent Protection	Red
	System Error - Sticky Relay Leakage Protection Error System Error - CP Failure	Red

Using Mobile App to Control and Monitor Charging ②

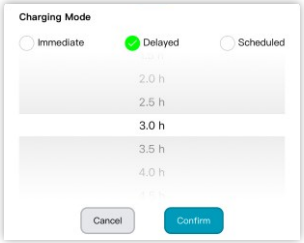
Welcome to the Tuya Smart App for easy remote control and monitoring of your charger!

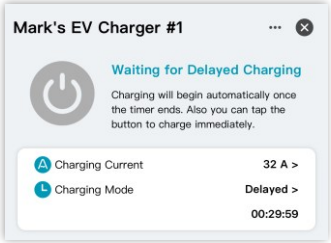
Once your charger is powered on and connected to your EV's charging port, it will start charging automatically. You can also easily set up a Delayed or Scheduled charging session.

1. Charging Mode:

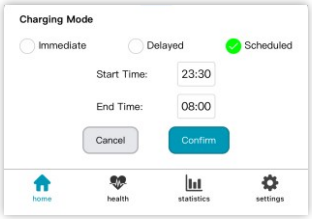
The Charging Mode icon acts like the C key on the control box, allowing you to manage your charger from your mobile phone. You can choose from one of the following 3 modes:

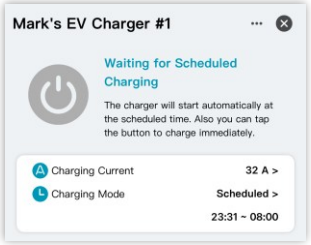
- **Immediate:** Charging starts right away as soon as you connect the charger to your EV—no delay.
- **Delayed:** This mode functions similarly to the timer on the control box. Once a new delay is set, the app and control box will sync and begin the countdown immediately.





- **Scheduled:** Set charging times based on off-peak electricity rates. Once you hit "Confirm," the app will sync the difference between the scheduled start time and the current time with the control box. For example, if the scheduled start time is 23:00 and the current time is 20:42, the app will send a 2 hour and 18 minute delay to the control box.



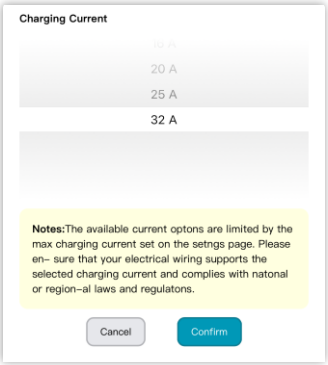


Note: After setting Scheduled in the app, please avoid manually adjusting the timer on the control box using the C key. Doing so will deactivate the scheduled mode, and the app will switch to delayed mode.

Using Mobile App to Control and Monitor Charging ③

2. Ⓐ Charging Current:

You can adjust the charging current directly from the app, just like using the A key on the control box. Even if the charger is already in use, changes to the charging current will take effect immediately.



Note: Your range of choices for the A key is limited to the max charging current you've set. If you need to adjust this for more efficient and safe charging, refer to the guide on page 7. Also, you can adjust it easily in “Settings” of the Tuya app.

Important:

It is **EXTREMELY IMPORTANT** to set the max charging current of your charger in accordance with **local regulations and the specifications of your power supply circuit.** This ensures that your charging process is safe and reliable.

3. Button Switch:

To exit the Delayed/Scheduled waiting state, tap the button to switch the charger to Immediate charging mode. The button will turn blue to indicate the change. To pause charging, simply tap the blue button again. The status will display as "Paused", and the button will turn grey. Tap the grey button again to resume charging.

To Share App with Your family

To share the app with your family, tap the "•••" menu, select "Share Device", and follow the instructions. You can also add a shortcut to your phone's home screen for easier access.

If needed, you can manage or remove the recipients of your shared access from the same interface.

Using Mobile App to Control and Monitor Charging ④

Frequently Asked Questions:

Q: Why doesn't the app show the EV battery's charging percentage?

A: During AC charging, as defined by IEC62752 and IEC61851, the EV and AC charger only exchange basic information about the charging current. The EV doesn't share details like the charging percentage with the AC charger, so it's not possible for the AC charger to display this information. Only DC chargers at charging stations use detailed communication with the EV to access this data. Anyway you can always check the charging percentage through your EV's app.

Q: If that's the case, why should I use the Tuya app instead of just relying on my EV's app?

A: Good question! While your EV's app is excellent for monitoring the vehicle itself, it can't control or monitor the AC charger. The Tuya app lets you adjust the charger's current and provides crucial safety and performance alerts. This includes notifications about issues like leakage protection, overcurrent or overvoltage, undervoltage, overheating in the control box or wall socket, grounding problems, relay faults, and leakage protection malfunctions. These are important insights that only the AC charger's system can provide. That's why the Tuya app is a valuable addition to your charging setup.

Q: Why is the Tuya app sometimes unresponsive, laggy, or sluggish when I press buttons?

A: This issue is typically caused by a weak or unstable network connection on your mobile phone or charger. If your phone relies on a weak mobile data connection instead of broadband Wi-Fi, delays or unresponsiveness may occur. To improve performance, move to an area with stronger signal coverage or connect to Wi-Fi. Additionally, position the charger closer to your router and ensure the signal strength is between 0 and -60 dBm. Signal strengths below -70 dBm for either your phone or charger may cause noticeable lag or app malfunctions. To check the Wi-Fi signal strength of the charger, you can

1. Observe the Wi-Fi icon at the top of the control box screen.
2. Open the app and tap the "•••" menu.
3. Select "Device Network" and check "Signal Strength."

If the signal is weak, move the router closer to the charger.

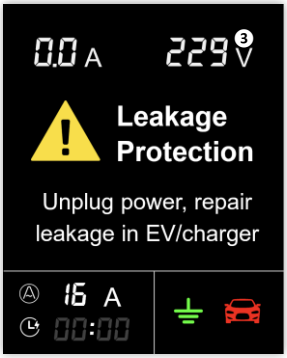
Q: Q: How do I add a new Wi-Fi when visiting a new location?

A: Connect your phone to the new Wi-Fi. Hold the 'A' key on the control box for 5 seconds to clear the previous Wi-Fi settings and enter pairing mode. Then, open the Tuya App and follow steps 2 to 5 on pages 14–15 to reconnect the charger to your phone via the new Wi-Fi.

Troubleshooting ①

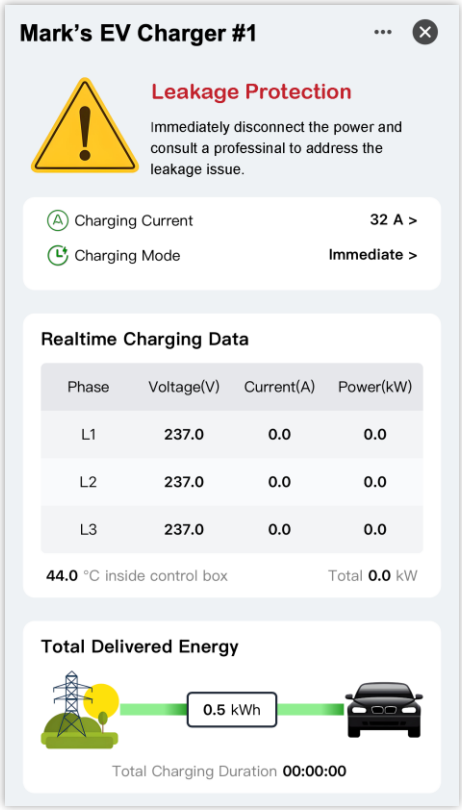
● 1 - Leakage Protection

If a leak is detected between the EV connector and your vehicle, the charger's Type B RCD (Residual Current Protection Device) will immediately halt power supply and display an error message on the screen, accompanied by a flashing red LED status indicator.



Action: Disconnect the power immediately and consult a professional to identify and fix the leakage source.

Important: Keep your charger clean and dry. Never clean with a wet cloth or rinse with liquids. For more details, see page 2.



Alerts Display on Tuya App

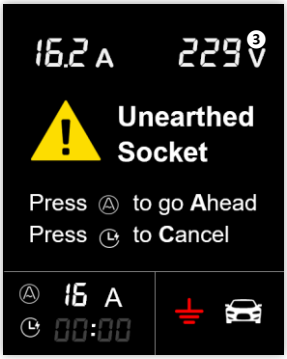
When the Wi-Fi-enabled charger enters a safety protection or error alert state, all alert information is displayed simultaneously on the control box screen and the Tuya app home screen, as shown in the example images.

To keep the manual concise, the following sections will only include illustrations of alerts as they appear on the control box screen, excluding images of the Tuya app interface.

Troubleshooting ②

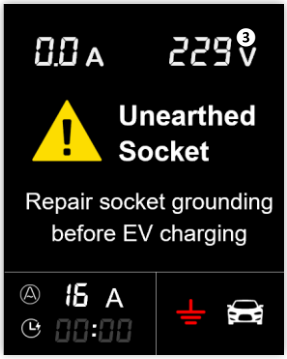
● 2 - Unearthed Socket

If an unearthed socket is detected upon powering on, a reminder with a red grounding icon will appear, prompting you the options to either continue or cancel charging.



Action: To proceed with charging, simply press the A key. If you wish to cancel charging, just press the C key.

Please have the unearthed socket repaired to ensure proper grounding for safe charging.



Troubleshooting ③

● **3 - Wall Socket Overheat Protection**
(Not suitable for CEE industrial plugs)

If the built-in temperature sensor in the household plug detects overheating (≥70°C), the charger will display a “Wall Socket Overheat” warning, stop charging, and the LED indicator will flash red. Once the temperature drops below 60°C, charging will resume at a reduced current.

Action: Charging pauses to allow cooling. When the internal temperature drops below 60 °C, the charger automatically resumes charging at a reduced current.

Please check your wall socket and the size of the wiring to ensure they can safely handle the charging current.

Important

This feature is specific to household plugs only, excluding CEE industrial plugs.

The feature is only a supplementary precaution and does not replace the need for proper socket installation and wiring. Refer to pages 8-9 for more details.

● **4 - Control Box Overheat Protection**

If the control box's internal temperature exceeds the preset safety limits(80°C), a 'Control Box Overheat' warning will appear on the screen.

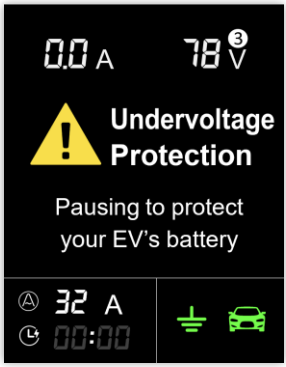
Action: The charger will pause charging and automatically switch to a lower current mode once it cools down.

Troubleshooting ④

● 5 - Undervoltage Protection

If the grid voltage drops too low(<80V), potentially damaging the charger and EV battery, the charger will cut off the power supply.

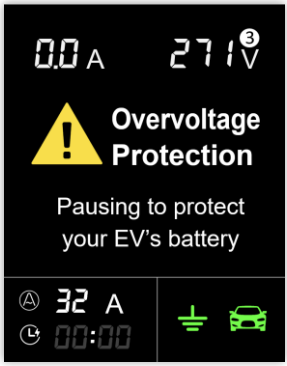
Action: No action needed from you. Charging will resume when the voltage increases to a safe level.



● 6 - Overvoltage Protection

Should the grid voltage become too high (>270V), posing a risk to both the charger and your EV's battery, the charger will automatically stop supplying power.

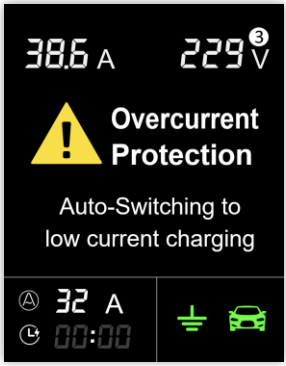
Action: No action needed from you. Charging will automatically resume once the voltage returns to normal.



● 7- Overcurrent Protection

If the charging current exceeds the set value by more than 20% or 2A (whichever is greater) due to interactions between the power grid, EV, and charger, the charger will issue an overcurrent warning and reduce the PWM signal to prompt the EV to lower its charging current within 1 minute.

Action: Charging will resume automatically at a reduced current within 1 minute. If overcurrent protection is triggered twice during a single session, charging will stop to prevent potential damage to the EV battery.

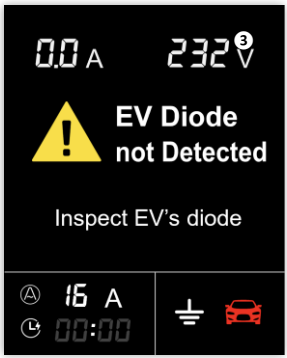


Troubleshooting ⑤

- **8 - EV Diode Not Detected**

  If the charger does not detect a diode on the EV side, an error message will be displayed.

  Action: Please check if the diode is correctly installed in your EV. If the diode is damaged, it should be repaired by a professional.



- **System Error**

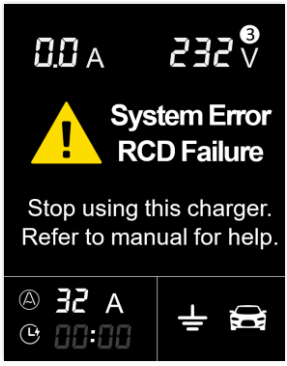
  If 'System Error' appears on the screen with an accompanying fault message as follows, it indicates a critical technical issue with the charger.

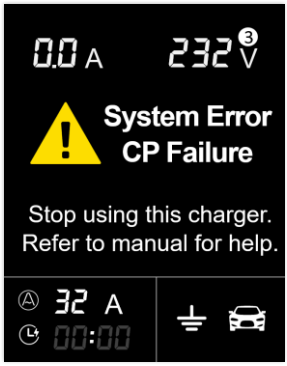
  9 - Sticky Relay

  10 - RCD Failure

  11 - CP Failure

  Action: Stop using the charger and contact your dealer or service agent for further assistance. It is strongly advised to have it inspected or remedied by qualified professionals.





Thank you for choosing our product. We're committed to providing you with a safe and efficient charging experience.

For any further assistance or inquiries, please refer to our customer support section.