wondrwall




# Dynamic EV Charger 7kW/22kW Installation Guide

# Contents


**1 General** 3
1.1 Unit General Information 3
1.1.1 Appearances 3
1.1.2 Techincal Specification 3
1.1.3 Product Appearance Parts 5
1.2 Product Dimensions 5

**2 Safety & Warnings** 5

**3 Packaging** 6

**4 Installation Preparation** 7

**5 Installation Steps** 8
5.1 Step 1 8
5.2 Step 2 8
5.3 Step 3 8
5.4 Step 4 9

**6 Power-on Check** 10
6.1 Pre-Electrification Checks 10
6.2 Start-Up Inspection 10

**7 Troubleshooting** 10
7.1 Indicator Light Status 11
7.2 Troubleshooting 12

# 1 General

## 1.1 Unit General Information

### 1.1.1 Appearances




WDR-CC-22S-UK

### 1.1.2 Technical Specification

| | |
|---|---|
| **Wondrwall EV Charger** | |
| Dimensions (W x D x H) | 210mm x 90mm x 235mm |
| Net Weight | <4.5Kg |
| **Structure** | |
| Enclosure protection requirements (IP protection class) | IP65 |
| Anti-corrosion and aging requirements | The housing shows no reduction in strength, no corrosion, and no rust after salt spray testing. The test in conducted in accordance with IEC 60664-3. |
| Mechanical strength requirements | IK08(Challenge IK10) |
| Materials | Material UV resistant, flame retardant PC material, impact resistance, fire rating UL 94 V0 or above |
| Installation Requirements | Wall-mounted (optional column) |
| Alignment | Lower inlet (standard, about 50cm of three-phase input line outside the pile) |
| Connection Method | Connection type B |
| Durability | The pile base shall withstand 10,000 insertion and removal cycles without damage. The insertion and removal force must be less than 100N. |
| **Usage** | |
| Charging Method | Swipe card charging, APP charging, Bluetooth key (Bluetooth sensorless charging), Plug and Play charging |
| Charging Time Configuration | Appointment charging (off-grid normal execution of appointment after successful appointment) / Valley charging (48 time slots configuration) |
| Power Adjustment | Automatic adjustment according to instruction / Automatic adjustment according to temperature |
| Data Reporting | Failure: Failure of the device or system parameters, will be reported to the backend server in real-time via the external network.<br>Log: Each control operation is recorded and stored on the Flash (TF card). Logs are uploaded to the backend server when triggered by the system.<br>Status: The current operating status is uploaded to the backend server at regular intervals of five seconds (adjustable) during normal operation. |
| Local Storage | Fault alarms are stored locally on the Flash card. Each fault event is recorded, with support for storing at least 100 entries. |
| Independent Clock | Equipped with an independant clock module to ensure continuous timekeeping. The clock maintains accurate time for up to 5 days after the pile loses power. |
| Remote Upgrade | Supports over-the-air (OTA) updates with automatic recovery in case of upgrade failure. Device functionality remains unaffected during the upgrade, and all configurations are retained after the update. |
| **App** | |
| App | Wondrwall app |

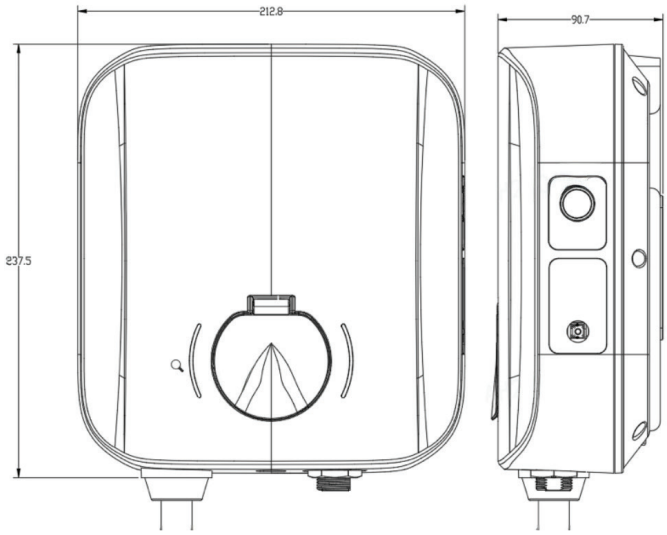
| | | |
|---|---|---|
| **Electrical** | | |
| Rated Power | 7kW | 22kW |
| Input Voltage | AC230V±10% | 400V±10% |
| Input Frequency | 47~63Hz | 47~63Hz |
| Output Voltage | AC230V±10% | 400V±10% |
| Output Current | 1A~32A | |
| Standby Power Consumption | <5W | |
| Energy Metering | On-board metering Accuracy Class A or better (within 2%) | |
| Surge | On-board Surge | |
| Leakage Switch | Built-in RCD EV type leakage protection circuit | |
| Display | LED RGB indicator | |
| Bluetooth + WiFi | Dual-mode Bluetooth 5.2+ (Remote and Optional Module Interface Compatible)/WIFI IEE802.11b/g/n 2.4GHz | |
| Ethernet | Auto-negotiation support (10/100-Based full duplex/half duplex) | |
| 4G | Optional | |
| Swipe Module | Two factory-paired M1 (Mifare) cards are provided. Charging is enabled via the Mifare card, with identification based on the card's UUID.<br>The M1 card must be bound to either the mobile app or a specific charging pile (stake).<br>Binding is supported both online (via network) and offline (via local card swipe). | |
| Reliability | MTBF>100000h | |
| Operating Temperature | Suitable for -30°C to +55°C | |
| Storage Ambient Temperature | Suitable for -40°C to +85°C | |
| Noise Level | ≤55dB (ambient noise ≤40DB under the rated power of charging pile, at a horizontal distance of 1m from the charging pile) | |
| Altitude | ≤2000m (customised for more than 2000m) | |
| Humidity Requirements | 5%-95%, no condensation (IEC 60068-2-3:2007 humidity and heat) | |
| Shock & Vibration Resistance | The entire unit complies with transport vibration and mechanlical shock standards, with no impact on electrical performance. | |
| **Certificate** | | |
| Reliability | Low temperature: IEC 60068-2-1, High temperature: IEC 60068-2-2, Alternating humidity and heat IEC 60068-2-30, Temperature rise IEC TS 61439-7, Protection class IEC 60529 | |
| Safety Certification | IEC 61851-1, IEC 60664-1-2020 (Insulation Resistance, Dielectric Strength, Electrical Clearance and Creepage Distance) IEC 61851-1: 2017, EN 61851-1: 2019 (AFSL add UL 2684,UL 2231, IEC 60950) | |
| EMC Certification | Class B (EMI: conducted, radiated, EMS: electrostatic, surge, EFT, CS, RS, etc.) IEC 61851-21-2: 2018, EN 61000-6-1/-2/-3/-4 | |
| RCD | IEC 62955: 2018 | |
| RF Certification | EN 301489, EN 301 908-1/-13,<br>EN300328, EN300330-1/-2 | |
| Environmental Certification | ROSH | |
| Other Certification Requirements | CE/UKCA | |
| **Warranty** | | |
| Warranty | 5 years | |
| **Basic Information** | | |
| Reference Standard | AC EVSE CE-EMC+UKCA-VOC: EN 300 328; EN 300 330; EN 301 489-1;<br>EN 301 489-3; EN 301 489-17; EN 62311; EN 61851-21-2<br>AC EVSE CE-Safety<br>EN IEC 61851-1:2019+A1+2023<br>IEC 62955:2018<br>BS EN IEC 61851-1:2019+A1:2023<br>BS7671:2022 | |

### 1.1.3 Product Appearance Parts

| No./Name |
| --- |
| 1. Outer Shell |
| 2. Base Shell |
| 3. Logo |
| 4. Fingerprint Lock Sensor |
| 5. Network Terminal |
| 6. Cable Terminal |
| 7. Charging Cover |
| 8. Indicator Light |
| 9. Charging Base |




### 1.2 Product Dimensions




# 2 Safety and Warnings

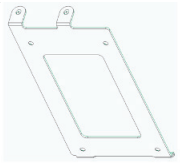
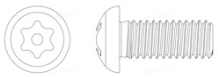
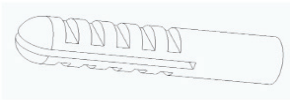
Please read and retain these instructions before installing or using the EV charger.

- Keep this manual for future reference. Read all instructions carefully before installation or operation.
- Do not install or use the charger near explosives, flammable materials, chemicals, vapours, or other hazardous substances.
- Ensure the charging socket is clean and dry before use. If necessary, wipe it with a clean, dry cloth.
- Conduct electrical safety checks before powering on.
- Ensure the charging connector (gun) is clean, dry, and free from damage.
- Do not use the charger if any components are damaged, cracked, worn, or show exposed wiring. Contact a qualified professional.
- Do not disassemble, repair, or reinstall the charger without proper authorisation.
- If abnormal behaviour occurs, immediately disconnect the power supply.
- Protect the charging station and circuit breaker from rain and lightning.
- Keep children away from the charger at all times.
- Do not allow children near the vehicle while charging.
- Do not operate or move the vehicle during the charging process.

# 3 Packaging

Upon receipt of the EV charger, open packaging and check the following items:

- Check the EV charger for any breakage or damage, please notify the seller immediately if EV charger is damaged.
- Check all accessories are present and free from damage. If any item is missing, please contact the seller immediately.

| Packaging | | | | | | |
|---|---|---|---|---|---|---|
| **No.** | **Name** | | **Specifications** | **Unit** | **Qty** | **Remarks** |
| 1 | EV Charger |  | 237.5x213x90mm<br>600MM input line | PCS | 1 | |
| 2 | User Manual | N/A | N/A | PCS | 1 | |
| 3 | IC Card |  | 30x50mm IC Card | PCS | 2 | |
| 4 | Wall Plate |  | T1.5mm. Black sand grain | PCS | 1 | |
| 5 | Fixing Screws |  | Cross pan head machine screw. M4x10 | PCS | 2 | For fixing the EV Charger to charging posts |
| 6 | Expansion Screws |  | Cross countersunk machine screw Ø4x30x10 | PCS | 4 | Fixed wall plate |
| 7 | Expansion Tube |  | Ø4x30 Expansion tube. PA/PE | PCS | 4 | |
| 8 | Spanner |  | T20 Ø465 | PCS | 1 | |

# 4 Installation Preparation

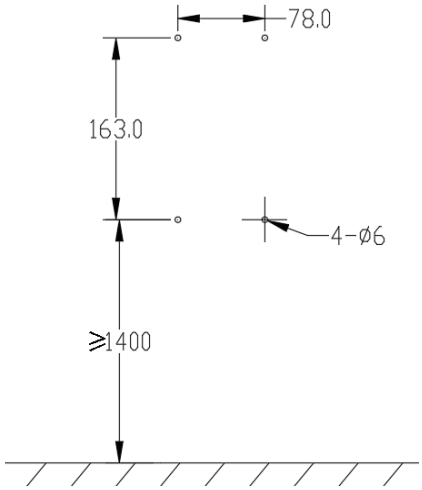
Note:

- Ensure the power distribution system is suitable and that a residual current (leakage) protection device is installed.
- Do not install the charger during extreme weather conditions.
- Always disconnect the upstream (front-end) power switch before starting installation.
- Use appropriate tools, including a screwdriver, drill, and wire crimper. Refer to the specification table to select the correct breaker, cable, and terminal types according to the charger's rated capacity.

| Model | WDR-CC-07S-UK | WDR-CC-22S-UK |
|---|---|---|
| Circuit Breaker | 40A/2P | 40A/3P +N |
| Cable | 3*10AWG | 5*10AWG |
| Wiring Terminal | SV6-5 *3pcs | SV6-5 *pcs |
| Screwdriver | 1PCS | 1PCS |
| Electric Drill | 1PCS | 1PCS |
| Crimping Pliers | 1PCS | 1PCS |

# 5 Installation Steps

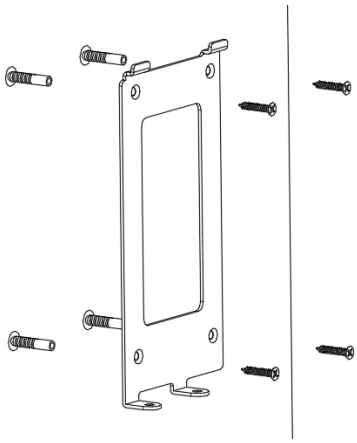
## 5.1 Step 1




Using the diagram above as a reference, use an electric drill to create four mounting holes in the wall. Each hole should be 6.0 mm in diameter and 30 mm deep.

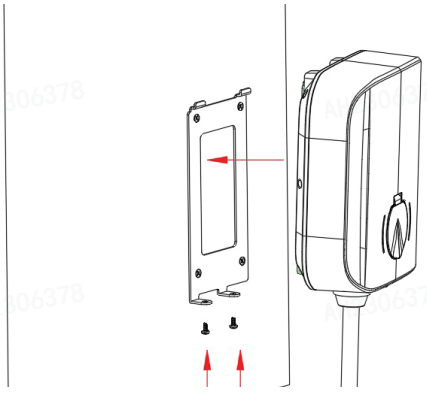
Note: It is recommended that the installation height be greater than 1400 mm. Ensure that the mounting surface is a solid wall.

## 5.2 Step 2



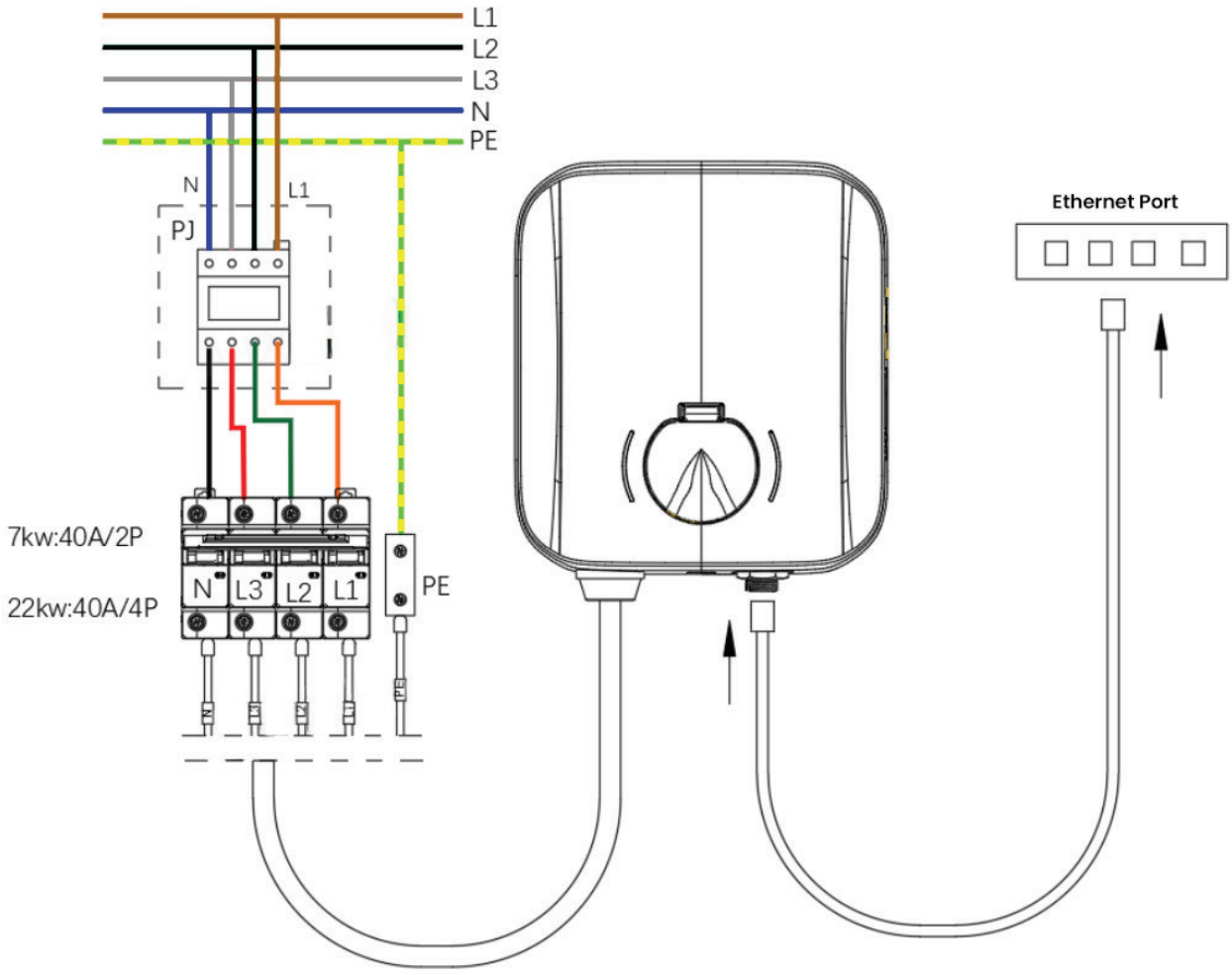
Insert the expansion tubes into the pre-drilled holes. Secure the wall-mounting plate to the wall using self-tapping screws.

## 5.3 Step 3

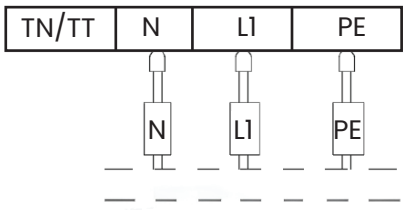


Insert the expansion tubes into the pre-drilled holes. Secure the wall-mounting plate to the wall using self-tapping screws.

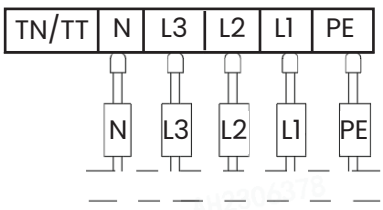
## 5.4 Step 4




Single Phase - 7kW




Three Phase - 11kW / 22kW




**Please note:** L2 and L3 not used for single phase configurations

- Ensure the circuit breaker is disconnected and de-energised before beginning. Connect the input cables to the circuit breaker as shown in the wiring diagram.

If using a wired internet connection:

- Insert the Ethernet cable into the network port as illustrated. Confirm that all wiring is connected in the correct order.
- Inspect for any loose, missing, or incorrect connections.
- For outdoor installations, a waterproof enclosure is required to prevent water ingress and reduce the risk of short circuits. Once all checks are complete, switch on the circuit breaker to power up the unit and complete the installation.

Note: The Ethernet cable must be supplied by the user.

# 6 Power-on Check

## 6.1 Pre-Electrification Checks

Before switching on power, ensure the following:

1. The charging station is installed in a suitable location—safe, stable, and accessible for maintenance.
2. An earth leakage circuit breaker is installed at the input end.
3. All wiring is securely and correctly connected.
4. No loose parts or foreign objects remain in or around the installation area.

## 6.2 Start-Up Inspection

After power is connected, the charger should display the following status indicators:

| No. | Function Status | Indicator Status |
|---|---|---|
| 1 | Power-on self-test | Blue-green-extinguished, flashes 6 times |
| 2 | Standby | Green light on |
| 3 | Waiting for plug insertion | Blue light flashing, on 0.5s off 0.5s |
| 4 | Charging | Blue light flashing, 3s |
| 5 | Swipe card detected | Green light flashing, on 0.2s off 0.2s, 5 times |

# 7 Troubleshooting

## 7.1 Indicator Light Status

| No. | Function Status | Indicator Status |
|---|---|---|
| 1 | Power-on self-test | Blue-green flashing sequence for 6 seconds |
| 2 | Standby | Green light continuously on |
| 3 | Waiting for gun insertion | Blue light flashes (0.5 seconds on, 0.5 seconds off) |
| 4 | Charging | Blue light pulses every 3 seconds |
| 5 | Swipe card detected | Green light flashes (0.2 seconds on, 0.2 seconds off), 5 times |
| 6 | Software upgrade in progress | Blue light flashes rapidly (0.2 seconds on, 0.2 seconds off) |
| 7 | Relay sticking fault | Red light flashes once (1 second on), then off for 2 seconds (repeats) |
| 8 | CP failure | Red light flashes twice (2 seconds on), then off for 2 seconds (repeats) |
| 9 | Voltage fault | Red light flashes three times (3 seconds on), then off for 2 seconds |
| 10 | Overcurrent fault | Red light flashes four times (4 seconds on), then off for 2 seconds |
| 11 | Leakage current fault | Red light flashes five times (5 seconds on), then off for 2 seconds |
| 12 | Main board over-temperature fault | Red light flashes six times (6 seconds on), then off for 2 seconds |
| 13 | Relay over-temperature fault | Red light flashes nine times (9 seconds on), 2-second cycle |
| 14 | Frequency fault | Red light flashes ten times (10 seconds on), 2-second cycle |
| 15 | Ground fault | Red light flashes eleven times (11 seconds on), then off for 2 seconds |
| 16 | CC fault | Red light flashes twelve times (11 seconds on), then off for 2 seconds |
| 17 | Reverse phase fault | Red light flashes fourteen times (14 seconds on), 2-second cycle |
| 18 | Emergency stop | Red light continuously on |

## 7.2 Troubleshooting

Typical faults and treatment options:

| Phenomenon | Causes | Measure |
|---|---|---|
| Overvoltage | Voltage above rated value | 1. Check input voltage (rear end) |
| | | 2. Power down, and use a multimeter to measure the voltage of the power grid, when the voltage reaches the requirement, re-power and switch it on again. |
| | | 3. If voltage exceeds 95Vac for a short time, wait to return to normal range. |
| Undervoltage | Voltage below rated value | 1. Check input voltage (rear end) |
| | | 2. Power down, and use a multimeter to measure the voltage of the power grid, when the voltage reaches the requirement, re-power and switch it on again. |
| | | 3. If voltage is below 95Vac for a short time, wait to return to normal range. |
| Overcurrent frequency abnormailty | Charging current more than rated value / Abnormal AC input frequency | 1. Check the AC output cable connection is low resistance. |
| | | 2. Power down, and contact customer services. |
| Abnormal frequency | Abnormal AC input frequency | 1. Check the input voltage frequency from the back end. |
| | | 2. If the frequency exceeds 63Hz for a short period, please wait for the grid to recover to the normal voltage range. |
| | | 3. If the frequency falls below 47Hz for a short period, please wait for the grid to recover to the normal voltage range. |
| Abnormal temperature | Internal over-temperature of EV Charger | 1. Check that there is no heating equipment around the EV Charger. Make sure the ambient temperature is below 55°C. |
| Earth leakage protection | Excessive leakage current | 1. Immediately disconnect the distribution cabinet earth leakage protection switch. |
| | | 2. Check the AC output cable is not disconnected or connected to the ground with low resistance. |
| Protection against reverse connection | L/N input cable is connected in reverse | 1. Immediately disconnect the distribution cabinet earth leakage protection switch. |
| | | 2. Check if AC input and output cables are normal and the L/N input cable is not reversed. |
| LED indicator light is not lit | The EV Charger is not powered | 1. Check if the power inlet cable is connected and if the plug is firmly plugged in. |
| | Poor wiring connection on the light board | 2. Power down, and contact customer services. |
| | The light board is damaged | 3. Power down, and contact customer services |
| No response when swiping the card | The swipe card does not match | 1. Check if the card is incorrect. |
| | Poor wiring connection between charging gun and EV charger | 2. Check if the wiring between the EV Charger gun and the EV Charger is firmly connected. |
| | Charging gun in not fully connected to the vehicle | 3. Check if the wiring between the EV Charger gun and the vehicle is firmly connected. |