POD Point Solo Unit Installation Guide

Introduction

This guide is intended for use by competent electrical installers to understand the basic requirements and options to be considered when installing a POD Point Solo Mode 3 electric vehicle charging point. The POD Point Solo is designed for inside or outside installations.

Fig. 1

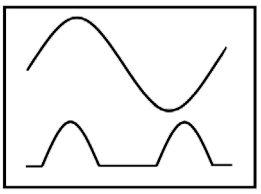
POD Point Solo - Socketed

Important Safety Information

Warning! The Pod Point Solo charging unit is manufactured to be safe and without risk provided it is professionally installed, used and maintained in accordance with the manufacturer's instructions and recommendations, It is installed by competent electrical installers in accordance with national and local regulations applicable at the time of installation, e.g.: BS7671:2008 Amendment 3:2015. The POD Point is designed to be connected to a dedicated AC supply only. The electrical installation of the POD Point is to be located must comply with minimum BS7671 standards before installation commences (gas & water bonding etc.). A minimum of double pole type A RCD/RCBO must be fitted at source (see Fig 2)

Fig. 2

Type A RCD Markings



Technical Details

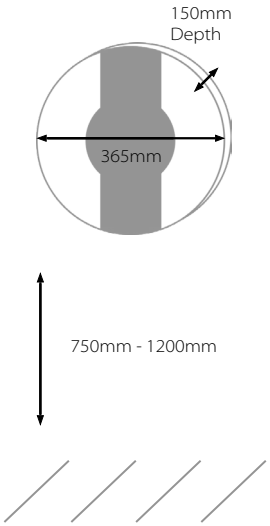
The Point Solo is designed and tested to exceed the following European standards: IEC61851-1 edition 3 (2017), Low Voltage Directive (LVD) 2014/35/EU and EMC Directive 2014/30/EU. During manufacture each POD Point has been functionality tested for safety using BS EN 61010 & BS EN 61557 approved equipment. The POD Point Solo is a Class I rated device for 230V / 400VAC 50Hz systems and is IP54 rated. The POD Point Solo is designed for and Insulation tested to 1500V.

Locating the POD Point Solo

After checking the electrical system is up to date and is safe to proceed with fitting, the installer should consult the property owner or user to establish their preferred installation location and visualise the unit prior to fitting, considering cable length between the car and the POD Point and practicalities of the location (supply cable routing etc.). The installer should confirm that the structure the unit is intended to be fitted to is appropriate and decide on the appropriate fixings to use.

Fig. 3

Dimensions and location of unit (150mm depth)



The POD Point should be mounted at a height of 750mm-1.2m to comply with building regulations. (Fig. 3).

Once the location and height of the POD Point Solo unit has been decided, the installer can begin marking the surface using the template provided on the carton insert for the 3 mounting positions (see Fig. 4).

- Before drilling commences ensure that the installation wall has been checked for electric cabling or pipework with a suitable detector.

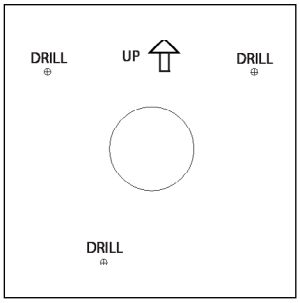
Drilling entry holes for the electrical supply cable

As the electrical supply to the POD Point Solo may be from several directions; the unit has been designed to accept supply cable entry on either the left, right or bottom sides or via rear entry 20mm "knock outs". The installer should drill a suitable size hole for the cable and seal or gland only at these "flat" surfaces provided. Cable entry holes must not be drilled on any curved surfaces as this may provide an entry point for water.
Water tight fittings should be used where the POD Point is placed in exposed locations, Cable entry at the top of the unit is strictly prohibited.

When drilling the case take care not to damage any wiring or components inside the unit. Place a suitable stop (e.g. block of wood) inside the case when drilling to prevent accidental damage, If any of the wiring or components are damaged during installation DO NOT CONNECT OR SWITCH ON THE POWER before consulting with POD Point.

Fig.4

Drilling Template



Additional parts required by the installer:

1. 3x M8 80mm screws
2. 3x Wallplugs
3. 20mm IP56 or greater gland for the conduit entry into the rear unit housing dependent on the supply method (20mm conduit, SWA armoured cable, flexible conduit etc.).

POD Point Solo Unit
Installation Guide

Fig 5.

Typical Schematic of installation circuit

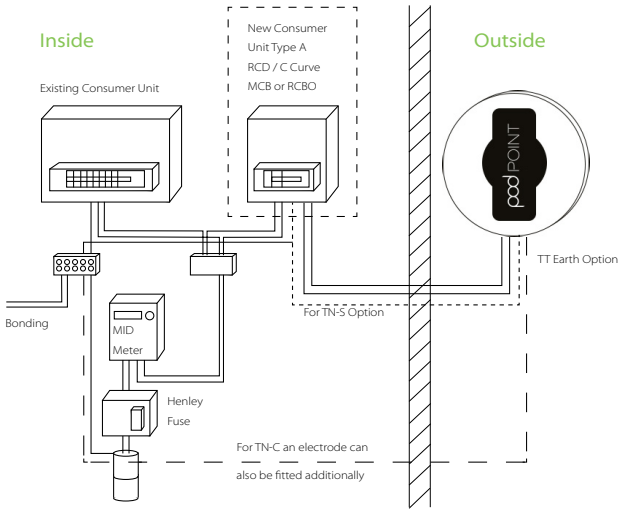


Table A.

Circuit protection and Power rating settings

Circuit Protection				Unit Power Rating				
Power Rating		Cable CSA	MCB * / RCBO	Switch Setting				
1Phase	3Phase			1	2	3	4	5**
1.4kW	4.3kW	1.5mm²	10A	0	0	0	0	Position depends on socketed/tethered
2.4kW	7.2kW	2.5mm²	16A	0	0	1	0	
3.1kW	9.4kW	2.5mm²	16A	0	1	0	0	
3.7kW	11kW	2.5mm² - 4mm²	20A	0	1	1	0	
4.8kW	14.4kW	4mm² - 6mm²	32A	1	0	0	0	
6kW	18kW	4mm² - 6mm²	32A	1	0	1	0	
7.2kW	21.6kW	6mm² - 10mm²	40A	1	1	0	0	
POD Disabled				1	1	1	0	

0=OFF, 1=ON
Switch 5 OFF for socketed units
Switch 5 ON for tethered units

*The POD Point also provides internal over-current protection in addition to the above

Installation Procedure

Once the desired cable routing is complete the wall can be drilled using the template provided, avoid using the POD-Point at a drilling template as resulting accidents or debris may result in damage to the unit.

The Pod-Point can now be fitted to the wall using appropriate fixings, once in place, the rear unit should be securely fixed flat to the wall, avoiding warpage of the rear housing.

Earth Arrangements (See Fig. 5)

The POD Point Solo features an on-board monitoring system to detect low voltage supplies and potential earth problems, If such a condition is encountered the charge cycle is ended and the vehicle becomes isolated from the incoming supply and effectively becomes double insulated. These features emit the need for the installation of an earth electrode and the POD Point Solo unit can safely be connected directly to a TN-C-S (PME) earth system without any special arrangements. The POD Point Solo complies with regulation 544.14.1 of BS7671.

Note for RCD

The IET code of practice stipulates that all RCD's meet BS EN61008, BS EN61009 and BS EN60947-1or equivalent that disconnect both live and neutral conductors and "specify" a Type A RCD/ RCBO to be fitted. Type B may also be used.

The minimum requirement for the POD Point Solo is a 30mA Type A RCD is installed in the consumer unit - (iΔn) not exceeding 0.03A and an operating time not exceeding 40ms at a residual current of 5 iΔn, with an additional MCB.

The earth input of the Pod-Point may also be connected to a TT earth, If an adjacent installation (within 10 meters) has a PME earthing arrangement where the POD Point Solo would be connected to a TT system it is imperative that the risk assessment is conducted. If a TT earth system must be fitted to the POD Point Solo, it shall be independent from the distributors earth system with no direct interconnection (the incoming supply SWA protective earth should be isolated from the housing and/ or earth electrode). The electrical installer shall install a suitable electrode complete with termination housing and covers where appropriate, warning labels should be visible and close to the unconnected SWA protective earth (e.g inside the Pod-Point).

The earth connection shall be made from the electrode to the POD Point Solo via copper conductor earth wire of an appropriate CSA for the installation. The earth wire shall be installed in conduit where there is a risk of mechanical damage or UV exposure.

Where installations are located inside of a building the PME earth maybe used for both tethered and socketed home chargers.

Where the charge cable may enable charging outside of the garage area it is advisable that a risk assessment is undertaken to ensure conductive fixtures in the equipotential zone do not pose risk.

In some installations, additional bonding maybe required for external metallic structures, metal garages, iron fences etc. if the vehicle or EVSE could come into contact with the structure (i.e. if the structure and vehicle can be touched simultaneously).

* Additional Note: TT Electrode impedance recommended to be < 100 ohms.

POD Point Solo Unit Installation Guide

Array systems

In the case of several charging points In the same location, an additional local ground electrode (if applicable) must be provided for a maximum of every 10 outlets. The maximum resistance for each additional ground connection (taken independently) must be less than 167 ohms to ensure a single safe equipotential zone exists.

Transformers

If a low earth Ze is not achievable (e.g. IT system) then an isolation transformer is required. The transformer with galvanically isolated windings is placed upstream of the EVSE. The Neutral output feed of the transformer shall be connected to PE before any RCD or MCB (if 2 pole MCB is used), the EVSE PE should be treated as a TN-C-S and Ze values obtained accordingly.

*Direct connection to an IT system is prohibited.

Isolation and Switching for Security and Maintenance

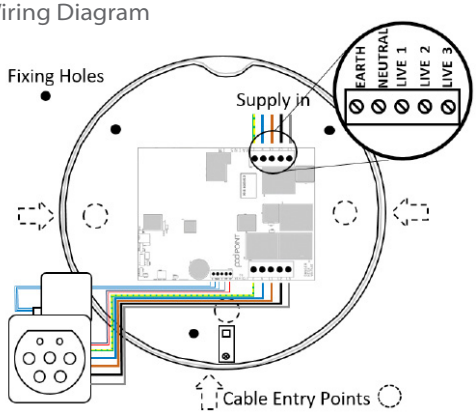
To ensure that the POD Point Solo unit can be "turned off" to enhance security and enable maintenance activity, a double pole isolator (or 2 pole RCBO) suitably rated must be installed within the customer's property in an accessible location. (See Table A) A dedicated isolator switch if fitted should be mounted at a height of between 450mm and 1200mm above finished floor level to achieve compliance with building Reg's. A dedicated isolator switch is a mandatory requirement for "new builds", but optional for existing dwellings (at customer's request).

All installations must comply to current BS7671 regulations at the time of installation.

Wiring up the POD Point Solo

Fig.6

Solo Wiring Diagram



- With the rear unit securely fitted to the wall, the electrical supply connection can be made.
- As the installation route of the wiring will vary with each Installation, allow enough cable for easy termination and prevent the PCB terminals being placed under strain.
- For socketed units allow adequate cable clearance for the vehicle connector when assembled.
- The choice of entry point used will determine the amount of insulation/SWA that needs to be removed for connection of the unit. The diagram left illustrates the connection terminals for the electrical supply cables.

Ensure that power cables are connected to the appropriate terminal as follows: (See Fig.6)

- Live 1: Brown
- Live 2: Black (3 Phase Units Only)
- Live 3: Grey (3 Phase Units Only)
- Neutral: Blue
- Earth: Green/Yellow

All of the cables that are to be connected into the supply terminals should have their insulation stripped back 12~15mm to provide good contact to the screw terminals/jaws, Recommended torque settings are 1.5~2.0Nm.

Before final assembly, appropriate checks shall be performed at the connections to confirm installation integrity (pull test).

Connecting to Wi-fi network

On power up of the POD Point Solo the LED's on the front should illuminate white.

To connect the unit to a Wi-Fi network:

Obtain the customers SSID and WiFi password key (usually found on the WiFi router) or let the customer complete a-c:

1. Scan for **podpoint** Wi-fi network on a mobile device and connect to it.
2. Open the web browser and type the ip address: **192.168.1.1** followed by enter.
3. Complete the following information on the page displayed on the device:
   a. **SSID name** of the network the POD Point Solo Is to connect via:
   b. **Type of encryption** of this Wi-fi network.
   c. **Password** of this Wi-fi network.
4. Press "**Add**" button located at the bottom of the web page.
5. **Power cycle** the POD Point Solo and wait for 1 minute. Light should go blue with a short magenta flash. If the LED remains white, you may need to power cycle the unit again and verify the settings.

NOTE: the Pod Point connects to a secure server, all data is encrypted using a unique algorithm.

POD Point Solo Unit
Installation Guide

pod POINT
Charging your Electric Car

Note for commisioning

Public used POD Points visit the PP Install App to commision this unit.

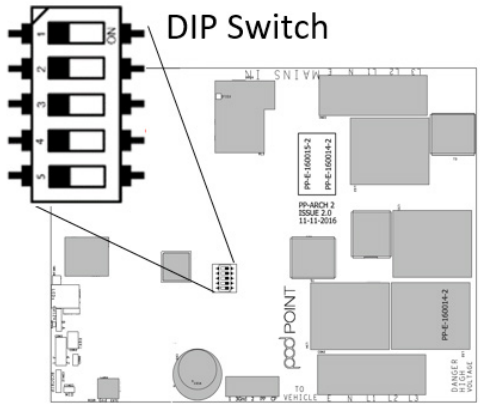
If you do not have access to the App, please text the details listed below to this phone number: 07805888545

- Site operator's name
- Site operator's email address
- Site operator's phone number
- Location of the unit
- Name of the unit (e.g.: John-Mary)
- PG-number of the unit (e.g.: PG - 90001)

Set the Power Output of Unit

Fig. 7

Power Rating Switch



Before Finishing the installation, the power output of the POD Point Solo needs to be set using the DIP Switch (See Fig.7). Table A (Page 2) illustrates the power settings using the switches 1-3.

Electrical Testing

Electrical tests shall be performed by an electrical installer with relevant qualifications and technical skills before during and after a POD Point Solo unit is installed:

- A visual inspection of the installation including the existing electrical installation.
- Verification of the characteristics of the electrical supply at the origin of the installation to confirm the supply is suitable for the additional load.
- A test to confirm insulation resistance of the new circuit.
- A test to confirm the polarity of the installation is correct (dead + lives tests)
- A test to confirm the earth resistance is within acceptable limits (i.e R1+ R2 text)
- An earth fault loop impedance test performed
- A test of the mechanical operation of residual current devices (RCD's)
- A test to confirm the operation of residual current devices (RCD's) is within stipulated timescales (1/2, 1 and 5 times rated trip current for positive and negative 1/2 cycles)
- A test or calculated measurement of the prospective fault current.
- A verification of the functional operation of the POD Point Solo unit. An Electrical Installation Certificate must be completed.

It is recommended that operation of the RCD/RCBO is checked periodically using the test button.

Final assembly of the Unit

Once the rear unit is been fitted and internal connections checked, remove any debris that may have entered the unit during installation. Check that the mating seal is in place before the front cover Is fitted. Place the cover on the housing, using the top fixing as a point of reference, then secure with 4 additional screws. The unit is also supplied with pin torx screws if additional security is required.

Fig. 8

Unit Label

Contact Us

If you have any questions, comments, or issues regarding POD Point Products which are not covered by this installation guide, please contact our customer support team. You may be asked to provide the serial number of your POD Point Solo (See Fig.8)As part of our quality and training programme calls may be recorded or monitored.

Customer Support

Telephone: 020 7247 4114
E-mail: support@pod-point.com
Web: www.pod-point.com