Solo 3 Commercial

Enabling Works Requirements

7kW - Freestanding Mount (FSM)

Introduction



1 Power Capacity

Customer is responsible for ensuring there is sufficient power capacity.

2 Circuit Protection

Customer is responsible for the installation of all circuit protection.



3 Cabling

Customer is responsible for the installation of all cabling.

4 Fix & Commission Responsibilities

Pod Point is responsible for the fixing and commissioning of units on site.

The Commercial “Solo 3” Charger is a single-socket electric vehicle charger with a universal socket. The Solo Charger (Single-phase) is capable of supplying power in a variety of charging rates of 3.6kW (referred to as ‘S3’) or 7kW (S7), designed for single-phase electrical supply.

This document is to be used when preparing your site for Pod Point to attend to install your commercial “Solo 3” - 7kW (Single-phase) charge points on Freestanding Mount (FSM). This guidance must be followed and evidence of completed enabling works provided to your Pod Point Project Manager a minimum of 5 days prior to Pod Point attendance.

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Related Documents

This guide should be read by installers undertaking Enabling Works in preparation for Pod Point attending to fix and commission a Commercial Pod Point “Solo 3” Unit (S7-UP) installed on Freestanding Mount (FSM) a dedicated supply with no load management. This document should be read in conjunction with the following documents:

- Solo 3 - Commercial - Datasheet (PP-D-210111-1)
- Solo 3 - Freestanding Mount - Datasheet (PP-D-200094-3)
- Solo 3 - Commercial - Install Guide (PP-D-210110-1)
- Solo 3 - Commercial & shared residential - User Guide (PP-D-190096-3)
- Solo 3 - Wi-Fi Connection Guide

Power Capacity/Circuit Protection

32A single-phase, per 7kW Pod Point



Customer is to ensure that there is sufficient dedicated capacity for the proposed charge point(s) with no diversity applied to the Electric Vehicle Charge Point (EVCP).
Reference regulation BS7671 - section 722.311
Assessment of available power capacity should be undertaken by a qualified electrician. They may;

- undertake a visual assessment,
- review your Energy Report and statement,
- undertake current clamping measurements,
- Review maximum demand reading from smart meter installed at DNO service head (if applicable).

Circuit Protection

Circuit protection must be installed in alignment with current BS7671 regulations, section 722.531.



Circuit Protection - Option 1 (MCB + 2-pole RCD)
1 x C40 (40A "C" curve) Single Pole 10kA MCB and an additional
1 x 2-pole 30mA type "A" or type "B" RCD.
Please note double pole (2-pole) RCDs must switch both Live and Neutral conductors on operation.



Circuit Protection - Option 2 (2-pole RCBO)
1x C40 (40A "C" curve) 2-pole 30mA Type "A" or Type "B"
Single Module 10kA RCBO.
Please note double pole (2-pole) RCBOs must switch both Live and Neutral conductors on operation.

A single RCD cannot protect multiple units, each unit needs to have a dedicated RCD/RCBO.

Earth leakage type:

Please see below the symbols displayed on the RCD/RCBO modules, that determine the type of RCD/RCBO.

type A:  type B: 

Please note that MCBs/RCBOs with "B" type or 32A rated will NOT be accepted.
Please note that RCDs/RCBOs with earth leakage type "AC" or other than 30ma sensitivity or 1 Pole+N (not switching all conductors) will NOT be accepted.

Electrical Supply Cable:



- A **3core SWA Cable** (L+N+E) - min. 6mm^2 - subject to volt drop calculation and reference method for C40 circuit protection.
- Each charge point must be supplied by a dedicated cable from the RCD/RCBO to the unit.
- All power cables must include a CPC (dedicated protective earthing conductor).

The Customer is responsible for producing their own cable calculations in alignment with the BS761 Standards. All cables must be installed to the current wiring regulations and adequately rated for the intended load.

When sizing your cabling please consider:

- The maximum cable size that can be terminated into the unit is 25mm^2.
- Minimum of **2m of spare cable** to be left coiled up above ground level at proposed unit locations for Pod Point engineers to ensure successful termination.

The Freestanding Mount, that is installed to fix the Solo 3 unit on, has a 90mm sized square hole on the bottom for cable entry from below.

Customer to confirm details if cables are expected to run within cable containment directly into the Freestanding Mount, mostly in internal car parks.

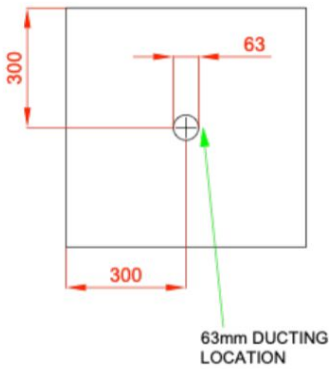
Civil`s Work

EV charger proposed location:

- The planned charging unit location shall be behind/on the side of the dedicated EV charging bay with the user interface on the front of the charger facing the allocated parking bay.
- The Pod-Point or its signage should not obstruct the pavement and in no circumstances should the width of a public footway be restricted to less than 1.2m, to allow suitable access for wheelchair users.

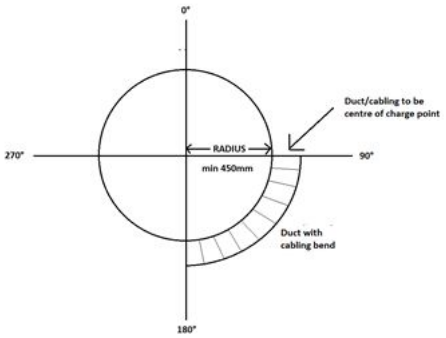
EV charger proposed location:

- **600mm x 600mm x 400mm (WxLxD)** non-reinforced concrete,
- The foundation must have a flush and levelled surface finish,
- Ducting must run directly to the centre of the foundation,
  (Off centre ducting causes issues for positioning of unit and guard rail).



Supply cable duct:

- Continuous twin wall duct for the entirety of the run, directly to the centre of the EVCP concrete foundation for unit entry from below,
- Minimum depth of 450mm except for roadways where depth should be 600mm,
- Minimum duct size of 63mm (should be adequate for the cable size running through),
- Maximum duct size of 110mm,
- Minimum bend radius 450mm.



Surface finish:

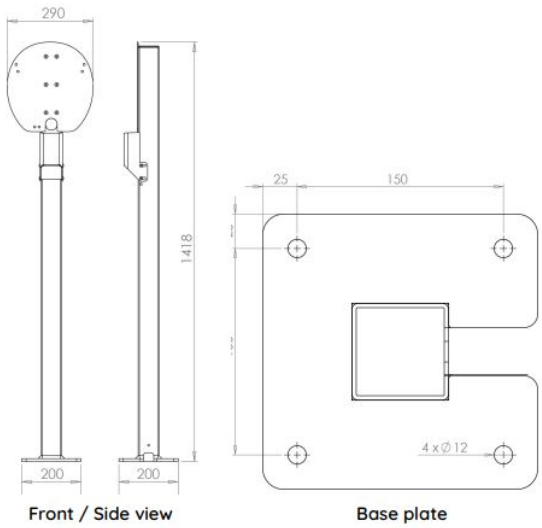
- The Freestanding Mount can be installed on plain concrete, finished tarmac or block paving surface with the required concrete base in place underneath.
- Customer to highlight to the assigned PM the surface finish type to select the correct fixing kit.



Freestanding Mount

Single Stand FSM (1418mm x 290mm x 200mm HxWxD):

- The single Freestanding Mount allows one Solo Charger to be securely installed in locations where wall mounting installation is not suitable. The electrical supply cable for the Solo unit is fed through the base, internally up the vertical post and to the charging unit fixed on the backplate.





Considering Equipotential Zones - Touch distance:

Electric vehicle supply element must be installed to current BS7671 regulations and in line with the IET Electric Vehicle Charging Equipment Installation Code of Practice, section 7.3.3.4.

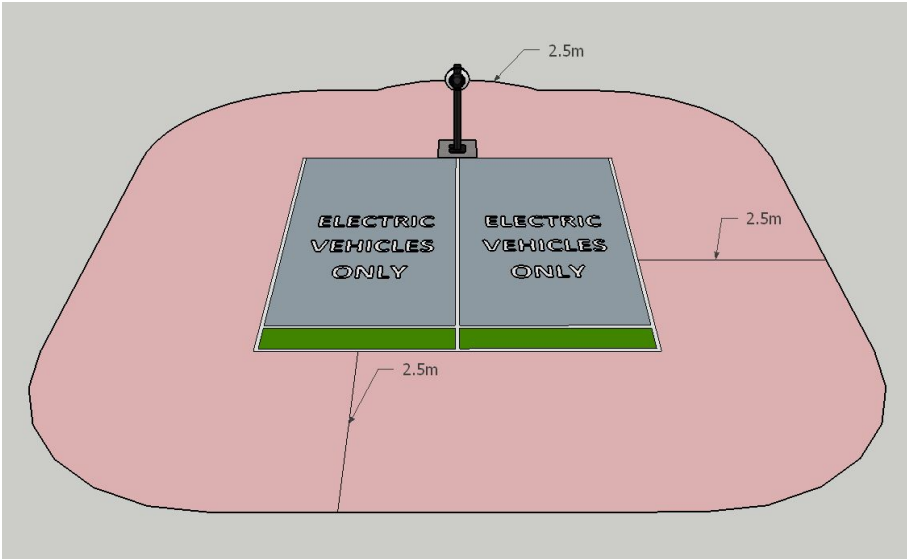
Customer to complete a risk assessment that the risks of simultaneous contact with electrical installations connected to different earthing systems, including other street furniture with PME earthing, are minimized.

Generally, this will require the charging equipment to be installed in a location that ensures that both the exposed-conductive-parts of this equipment and the vehicle themselves on charge, are at least 2.5m from:

- Other structures with exposed metalwork that are either connected to true earth or connected to any other electrical earthing system; and
- Any extraneous- or exposed-conductive parts of any other item of electrical equipment.

Otherwise, any other exposed earthed equipment within touch distance (2.5m) must be connected to the same earthing system (same DNO source) with the EVCP(s).

Touch distance (2.5m)
- From the proposed EV charger(s) location and
- From the boundaries of dedicated Electric Vehicle charging bays. Electric Vehicle`s body while on charge must be considered as earthed exposed equipment.



Earthing

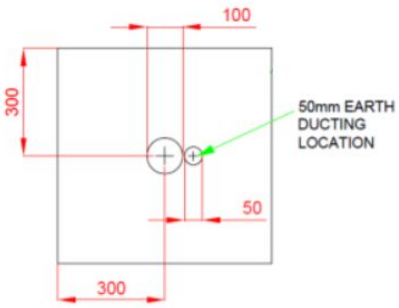
Planned Earthing arrangement:
Customer is to confirm planned/site earthing arrangement for the EV charging units to the assigned PM after completing an assessment on touch distances.

TN-C-S (PME) - Most cases
- Pod Point`s Solo unit has an in-built open PEN device to allow the car charger to operate on PME earthing system, without the need of using an earthing rod.

TN-S (privately owned transformer by client on-site)
- Pod Point Solo charging units can only be connected to a TN-S earthing system without the use of the in-built OPEN PEN device or earth rod, where it can be guaranteed that this will not be converted to PME in the future. In general, this can only be achieved if the site has a dedicated, privately owned electrical substation that uses a TN-S earthing system. If this is not confirmable, TN-C-S (PME) earthing system rules would be applied.

TT-earthing (local earth rod installed)
- Earthing rod must be installed next to the foundation (within 5m). Ensure that this is clear of any underlying services.
- Installed earth rod must be mechanically protected, with the correct clamp that allows a crimped termination to be made.
- Earth reading must be **under 100 Ohms.**
- 16mm2 sheathed Green/Yellow earthing cable should be provided in radial between the earth rod and EVCP.
- Earth cable can run in the same duct with supply cables.
- Where separate Earth cable duct (50mm sized twin wall) is to be installed, the entirety of the run must be enclosed, from the earth pit to the centre of the EVCP concrete foundation (next to the supply duct).
Customer to complete a risk assessment that the risks of simultaneous contact with electrical installations connected to different earthing systems, including other street furniture with PME earthing, are minimized.



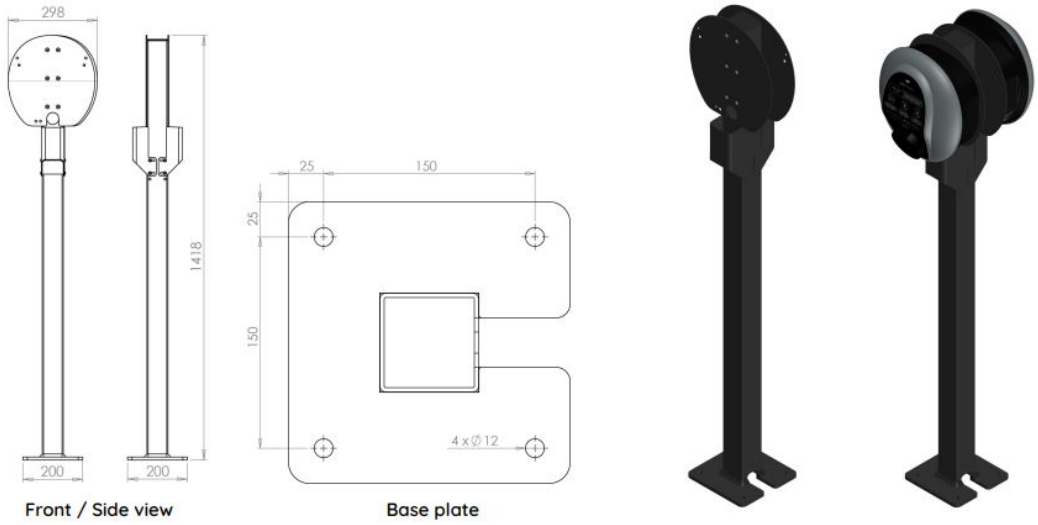


Multiple units and equipment on TT-earthing:
- Where 1 x earth pit/rod is supplying earthing for multiple units/equipment within 2.5m touch distance, a star bar is to be installed to allow multiple cables to be connected to the earth rod.
- Where multiple earth pits/rods are installed and the charging units and/or EV`s are within touch distance, **the earth rods must be linked together.** Assessment to be made for exposed earthed equipment within touch distance of 2.5m.

Dual Freestanding Mount

Dual Stand FSM (1405mm x 360mm x 250mm HxWxD):

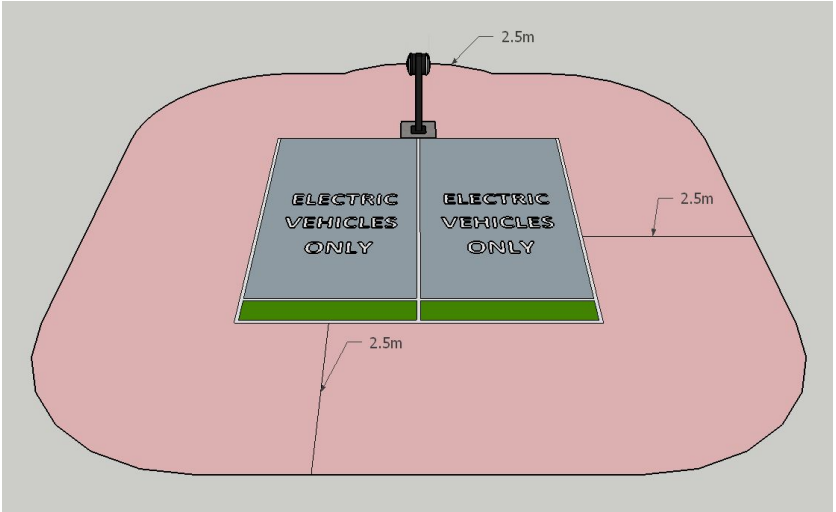
- The dual Free-Standing Mount allows two Solo Chargers to be securely installed in locations where wall mounting or Twin charging unit installation is not suitable due to space requirements. The two electrical supply cables for two the Solo units are fed through the base, internally up the vertical post and to the units fixed on the backplates.



Front / Side view

Base plate

Requirements:
Power capacity: **2x** 32A single-phase spare supply - no diversity
Circuit protection: **2x** C40 SP 10kA MCBs + **2x** 30ma type "A" (or "B") 2-pole RCDs or **2x** C40 30ma type "A" (or "B") 2-pole RCBOs
Cabling: **2x** 3core SWA Cable (L+N+E) - min. 6mm2 subject to volt drop calculation
Civil works: **Same** concrete base dimensions (600mm x 600mm x 400mm)
Earthing: **Same** principles with single stand FSM



Communication

Communication with Smart Reporting system:
Pod Point Commercial Charge Points are required to communicate with the smart reporting system at all times, through available 3G signal OR accessible Wi-Fi signal to reach the unit location. Units that do not communicate can not be warrantied.



You can find detailed guidance on connecting your Pod Point to Wi-Fi here:
Pod Point Solo Wi-Fi Connection Guide

External:
Where units are mounted outdoors with available 3G signal, Pod Point will supply a suitable amount of units to the site with inbuilt 3G routers.
Up to 7 sockets can connect to the same signal providing they are in adjacent parking bays and the signal is not interfered with by any obstructions such as concrete pillars.
Pod Point should be consulted if one router is to be used for multiple units to connect to.

External without 3G signal:
Customer to provide external accessible Wi-Fi communication signal to reach each unit. Passwords must be shared with the Pod Point representative and Pod Point must be informed of password changes to avoid drop-out in service.

Internal:
Where charging units are mounted internally, the customer must provide an internal accessible Wi-Fi communication signal to reach all units independently. Passwords must be shared with the Pod Point representative and Pod Point must be informed of password changes to avoid drop-out in service.

Wi-fi requirements:
- 2.4Ghz frequency,
- NOT a public network requiring SSID,
- NOT a network with a regularly changing password,
- Name of the Wi-fi profile to be less than 10 characters,
- Password to be less than 15 characters.

The customer is to confirm proposed charging unit locations and accessible Signal availability (3G or Wi-fi signal) to the appointed Project Manager.

Fix & Commission Responsibilities

Customer responsibilities:

- ❑ Ensure sufficient dedicated capacity for the proposed charge point(s) with no diversity applied to the EVCP (32A single phase, per unit).
- ❑ Correct circuit protection has been installed (Functionality verified).
- ❑ All cable containment installed (if required).
- ❑ All civil works completed with sufficient sized ducting to the centre of the suitable, levelled concrete base (600x600x400).
- ❑ Correct sized cabling installed (with cable calculation), connected at the supply end, and made safe at the unit end.
- ❑ Min. 2m cable left above ground at proposed unit location.
- ❑ Customer to confirm planned earthing arrangement and complete assessment for any exposed earthed metal structure within touch distance (2.5m) from proposed EV charger(s) and the boundaries of dedicated Electric Vehicle charging bays.
- ❑ Confirm charging unit location(s) and accessible Signal availability (3G or Wi-Fi signal).
- ❑ To provide an Electrical Installation Certificate of the installed circuit/s at least 5 days prior to Pod Point attendance to fix & commission units.
- ❑ Customer to provide photographs of installed circuit protection(s), cabling, proposed unit location/s with cabling in place at least 5 days prior to Pod Point attendance to fix & commission units.
- ❑ Customer to confirm to the appointed Pod Point Project Manager that the above responsibilities have been completed in full.

Pod Point will be responsible for the fitting of each charge point:

- Pod Point to notify the customer of the proposed shutdown time for the relevant distribution board (if required).
- Pod Point to use the existing cables to connect the charging unit (charger end only).
- Pod Point to use the existing circuit breaker.
- Pod Point to install the charging unit on Freestanding Mount in the relevant position and terminate the cable into the unit.
- Pod Point to complete functional testing.
- Pod Point to commission charging unit.
- Pod Point to complete Minor Works Certificate.
- Pod Point to conduct site handover.

Pod Point Company Details

Contact Us

Please contact the Project Manager assigned to your order with any questions. If you are unclear who your Pod Point Project Manager is please email us quoting the Pod Point quotation number (found in the top left of your Pod Point Quote).

Enquiries@pod-point.com

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Company details

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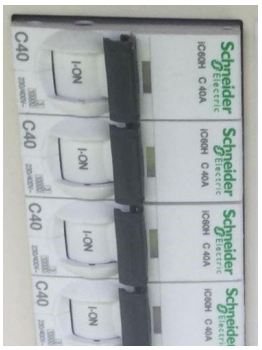
Examples of Acceptable Enabling Works

Circuit protection:

Configuration



MCB



RCD



Cable containment and cable:



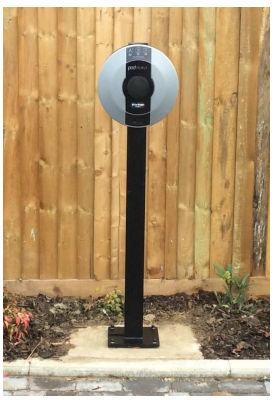






Completed installation (predecessor model):









pod POINT