

Technical Submittal



Project Description

Project 2020

Submittal Number

WBS.145

Submittal Date

30.10.18

Submittal Title

Car charging points

Supplier

POD

Model /Equipment ref

See attached

Specification ref

No reference within specification

Manufacturers
Attached
documentation

Attached

Identify where not
compliant

N/A

Issued by

Martin Johnson / Adam Fuller

Consultant comments
and Status (A,B,C)

Approved By

Reviewed by:

PRINT NAME

Issue Date


Sign Off Date

Information Regarding : Car Charging Units

Locations of Proposed Equipment

The units will be mounted adjacent to car parking spaces as specified on the GDM drawings.

Proposed Product : POD POINT Car Charging Units

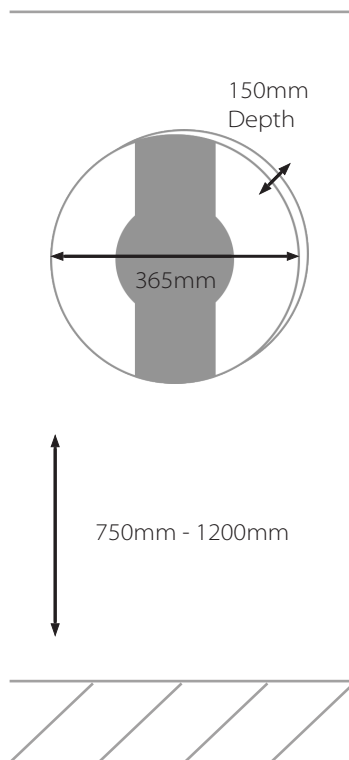
Item	Reference	Image
Pod Point 7kw Wifi Monitered Car Charging Unit Complete With Universal Socket. No Separate Leads To Be Supplied As The Universal Socket Will Be Compatible With All Electric Cars Which Have Their Own Leads.	As Data Sheets	

Installation Guide

Fig. 1 POD Point Solo - Socketed Version



Fig. 2 Dimensions and location of unit (150mm depth)



This is only a guide which is intended for use by competent electrical installers with the necessary competence and experience to carry out the installation in accordance with the local applicable regulations and legislation.

Introduction

This is only a guide which is designed to explain the basic requirements and options to be considered for the installation of a POD Point Solo mode 3 electric vehicle charging point. A POD Point Solo is an electric vehicle charging point designed for installation in indoor or outdoor locations. It is rated IP54.

The POD Point Solo is designed and tested to meet the following European safety & functionality standards for electrical devices. During manufacture each POD Point has been functionality tested for safety using BS EN 61010 & BS EN 61557 approved equipment.

Important Safety Information

Warning! The Pod Point Solo charging unit is manufactured to be safe and without risk provided they are professionally installed, used and maintained in accordance with the manufacturer's instructions and recommendations and installed by competent electrical installers in accordance with the regulations and legislation, e.g.: BS7671:2008 Amendment 3:2015 applicable at the time of installation. The POD Point is designed to be connected to one AC supply only. Property must comply with BS7671, before installation commences.

Locating the POD Point Solo

The installer should consult the EV owner to establish their preferred installation location. This should take into consideration the cable length of unit/car.

The POD Point must be mounted at a height of 750mm-1200mm to avoid vehicle impact. (Fig. 2)

Technical Details

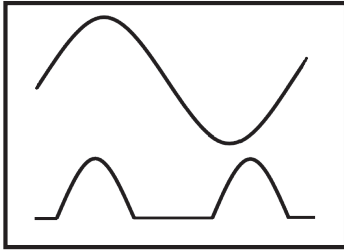
The Point Solo is designed and tested to meet the following European safety & functionality standards for electrical devices. During manufacture each POD Point has been functionality tested for safety using BS EN 61010 & BS EN 61557 approved equipment. The POD Point solo is a Class I rated device for 230V / 400V AC 50Hz systems.

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, details below. As part of our quality and training programme calls may be recorded or monitored.

Customer Support
POD Point Limited
145 - 157 St John St
London, EC1V 4PY
Telephone: 020 7247 4114
E-mail: support@pod-point.com
Web: www.pod-point.com

Fig. 3 Type A RCD Markings



Note for RCD

The IET code of practice stipulates that all RCD's meet BS EN61008, BS EN61009 and BS EN60947-1 or 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.

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.).

Fig. 4 Unit Label



Fig 5. Typical Schematic of installation circuit

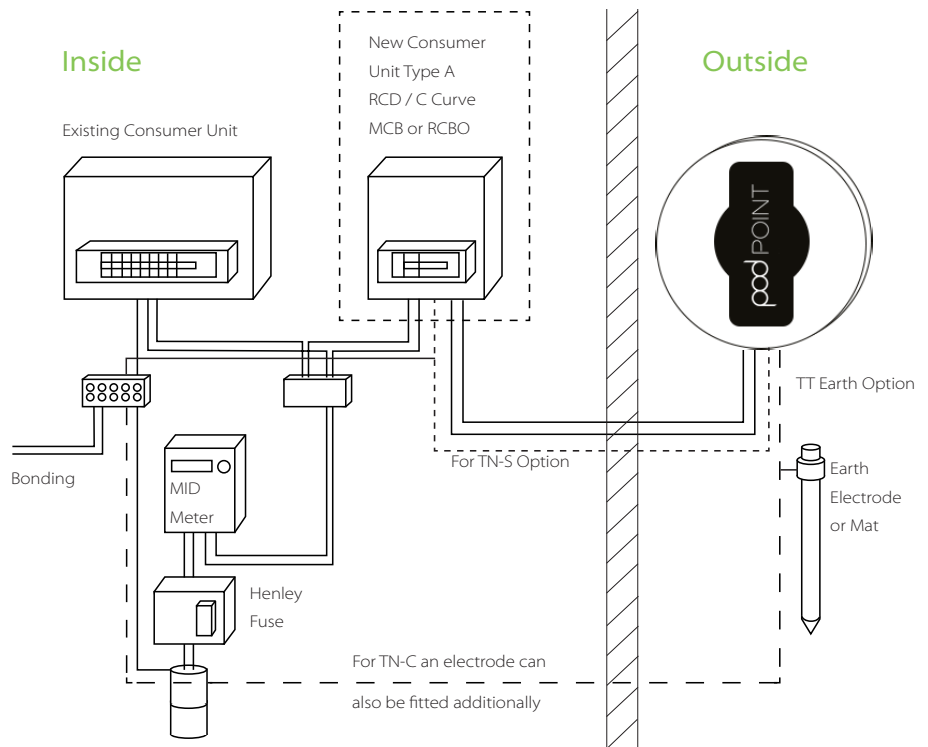


Table A. Circuit protection

Unit Rating	Cable Rating	MCB * / RCBO	RCD / RCBO
3.7kW	Typically 4mm ² - 6mm ²	20A (C curve)	30 mA Type A
7.0kW	Typically 6mm ² - 10mm ²	40A (C curve)	2 pole
11.0kW	Typically 4mm ² - 6mm ²	20A (C curve) 3 Pole	30 mA Type A
22.0kW	Typically 6mm ² - 10mm ²	40A (C curve) 3 Pole	4 Pole

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

Earth Arrangements

Where the home charger is to be installed outside, a separate earth electrode is required, If it can be proven that the existing installation complies with regulation 544.14.1 (the earth of the home charger and main earth electrode cannot exceed 70VRMS if the PEN conductor becomes open circuit) a separate earth electrode may not be required. It is the responsibility of the installer to conduct a risk assessment of the immediate area to a range of 10 Meters as to the safest and most reliable way to earth the POD Point Solo unit, If an adjacent installation (within 10 meters) have a PME earthing arrangement where the POD Point Solo would be connected to an existing TT system it is imperative that this risk assessment is conducted. If a TT earth system is required for the POD Point Solo it shall be independent from the distributors earth system with no direct interconnection (the incoming supply SWA protective cover (earth) should not be connected to housing or earth electrode).

The electrical installer shall install a suitable copper rod electrode complete with termination housing and covers where appropriate. 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.

POD Point Solo

The earth wire shall be installed in conduit where there is a risk of mechanical damage or damage as a result of exposure to sunlight.

Where installations are located inside of a building and a TN system is pre-installed and the vehicle may only be charged inside the building the PME earth maybe used, In the case of socketed home charger where the charge cable does not form part of the charger it should not be installed inside a garage (customers charge cable may enable charging outside of garage area)

In some installation 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) .

* Note 1: unit may be connected to PME earth if an additional earth elect code complying with Regulation 544.1.1 of BS7671 is fitted to MET.

* Note 2: Where signage is fitted at the rear of the POD Point, the sign should also be connected to earth, see separate documentation supplied with the sign.

* Note 3: For socketed units fitted inside a garage, consider converting the entire garage to TT.

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

Array systems:

In case of several charging stations connected to the same power supply line, an additional local ground connection will have to be ensured in order at least , every 10 outlets. The maximum resistance for each additional ground connection (taken independently) will have to be less than 167 ohms. All the ground lines will have to be connected to ensure a single equi – potential zone.

Transformers

If the earth is not achievable then a transformer is required. In Mode IT or TT> 150 Ohms: An isolating transformer with separate windings is placed upstream EVSE. This one must then be fed in mode TN. The Neutral feed of the transformer shall be connected to PE before the RCD and MCB (if 2 pole MCB is used), resistance measured between the EVSE PE and this Earth must be less than 100 ohms.

Mode IT is prohibited

All installations must comply to BS7671 regulations.

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 and repair activity, a double pole switch (or isolator) suitably rated may be installed within the customer’s property in an accessible location. The switch should be mounted at a height of between 450mm and 1200mm above finished floor level to achieve compliance with Building Reg’s. An isolator switch is a mandatory required for “new builds”, but optional for existing dwellings (for additional security at customers request).

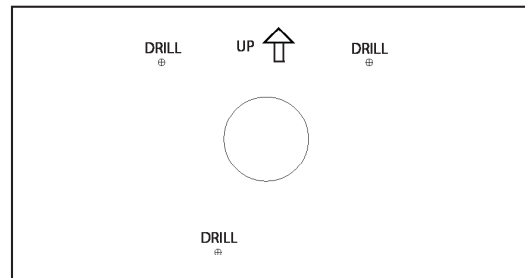
Installation Procedure

The POD Point Solo has been designed as a wall mounted device. The installer should confirm that the wall that the unit is intended to be fixed to is structurally appropriate for the mounting of the POD Point Solo. The installer should identify the construction of the wall, and identify the correct and

appropriate fixings to use.

- The Installer has a duty of care to ensure that the POD Point Solo unit is securely attached to the wall or structure where the unit is intended to be operated from.
- Once the location and height of the POD Point Solo unit has been decided, the installer can begin marking the wall with indicator points to locate the unit. Use the back of the box insert as the drilling template for the 3 mounting holes (Fig. 7)

Fig. 7 Drilling Template



* Back of box insert

- Before drilling commences ensure that the installation wall has been checked for electric cabling or pipework with a suitable detector.
- It is highly recommended this is done prior to any installation work commencement (drilling of fitting of conduit etc) to allow the customer to visualise where the unit will be installed. Once the installation site is marked up, confirm with the customer this meets their expectations.

Drilling the Holes for the Electrical Supply Cable Entry

As the electrical supply to the POD Point Solo may be fed from a number of directions; the unit has been designed to accept supply cable entry on either the left, right or bottom or via rear entry “knock outs” The installer should drill a suitable size hole for the cable and grommet/gland to be used. Flat surfaces have been provided at either side and the bottom of the unit for ease of drilling. Cable entry holes should not be drilled on any curved surfaces as this may provide an entry point for water. 20mm “Rear Knock outs” are provided for, water tight fittings should be used.

When drilling the case:

1. Only drill in the flat surfaces provided on the left, right, bottom or rear of the unit. Do not drill on any curved surface.
2. Take care not to damage any wiring or components inside the case. Place a suitable stop (e.g. block of wood) inside the case when drilling to prevent accidental damage.
3. If any of the wiring or components are damaged during installation DO NOT CONNECT OR SWITCH ON THE POWER before consulting with POD Point.
4. The wall can now be drilled for the 3 mounting holes, Do not drill with the POD-Point in position as masonry dust may damage the unit.
5. The Pod-Point can now be fitted to the wall, depending on the wall structure solid/dry lined or stud partition, appropriate fixings must be used to secure the unit..
6. Once fitted in place, the rear unit should be securely fixed flush to the wall.

POD Point Solo

Fig. 7: Kobling av 1-fas POD Point

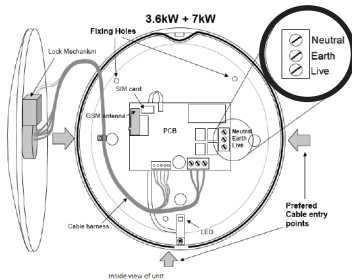
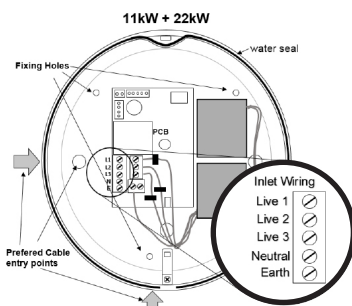


Fig. 8: Kobling av 3-fas POD Point



Note for commissioning

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)

In accordance with 'Part P' of the Building Regulations (England & Wales) all notifiable electrical installation work performed in domestic dwellings must be carried out by a competent electrical installer registered with a government approved Part P Competency Scheme or subjected to verification by the local building control department. In Scotland all work must be carried out by an electrical installer registered with a Building Standards Scheme such as those run by SELECT or the NICEIC.

NOTE: In England & Wales the installation of a new circuit or a connection point for equipment outside of the equipotential zone is notifiable.

Wiring up the POD Point Solo (See Fig 8-9)

- 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 to allow easy termination so that the PCB terminal are not under strain.
- The choice of entry point used will determine the amount of insulation/SWA that needs to be removed for the internal wiring 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:

- 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.

Before final assembly, appropriate tests shall be performed at the unit connections to confirm the installation is sound.

Commissioning/Registering the unit

Domestic/OLEV installs

On power up of the POD Point Solo the LED's on the front should illuminate in white. When the Communications module has initialised the LED's should change to magenta. When the unit has registered with the Pod Point server the LED's should then go blue with a short magenta flash. This process may take several minutes depending on GSM network and server load. If the LED's remain white for a prolonged period of time there may be no GSM signal or the sim card is not inserted correctly.

Public Used Pod-Points

Visit the PP Install App to commission this unit. If you do not have access to the app, see " Note for Commissioning".

Fitting the front of the Unit

Once the rear unit has been fitted, the wiring to the unit connected and tested, the front cover can be fitted in place. Prior to fitting the front cover, visually check the internal connections, remove any debris that may have entered the unit during installation and check that the front cover mating seal is in place. Place the cover on the housing, using the top fixing as a point of reference, the front cover can then be secured in place at 5 points. The unit is supplied with both pozidriv and T15 pin torx screws if additional security is required.

Final Electrical Testing

To meet the BS7671 (17th edition) requirements for testing of an electrical installation, the following tests and checks shall be performed by a competent electrical installer 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 the continuity of the circuit protective conductors.
- A test to confirm the integrity of the circuit insulation resistance.
- A test to confirm the polarity of the installation is correct.
- Where applicable a test to confirm the earth electrode resistance is within acceptable tolerances (or)
- An earth fault loop impedance test
- 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 (at the rated current and at five times the rated current operating current.)
- 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

POD Point Solo

Single Phase



Cable



Universal

Physical Properties

Dimensions	Ø=360mm, depth=150mm
Standard Colour	Grey & Black
Shipping Weight	5kg
Operating Temp	-30°C to +50°C
Operating Humidity	95% Non Cond
Enclosure Rating	IP54

Electrical Specification

Rated Voltage	230V AC Single Phase
Rated Frequency	50Hz
Over current protection	To be fitted at source
Earth leakage protection	30mA Type A RCD/ RCBO to be fitted at source
Standby power consumption	5W
Standards compliance	LVD 2006/95/EC EMC 2004/108/EC EN 61851 -1 and 22 CE Certified

Contact
020 7247 4114
enquiries@pod-point.com
www.pod-point.com

Installation

POD Point Solo's are designed for installation in either open air or protected environments. The product should be installed by a certified electrician and uses industry-standard mechanical fittings and electrical connections. POD Point can, in some territories, provide a turn-key service for the installation and commissioning of charge points. Note that to validate the product warranty, installation shall be done in accordance with POD Point's guidance and all relevant legislation.

Compatibility

POD Point Solo units are compatible with the Mode 3 charging standard and have been tested with the vehicles listed in the Vehicle Compatibility Section

Connectors and Power Ratings

POD Point Solo units are available with a SAE J1772 gun on a 4.8m attached cable, an IEC 62196 gun on a 4.8m attached cable or with an IEC 62196 Socket with the Mode 3 charging standard.

Status lights

The status of the charge point is shown by coloured status lights.

Management Information System Compatible

Communicating variants of Solo are compatible with the POD Point MIS.

Pay-as-you-go Compatible

Communicating variants of Solo are compatible with the POD Point Pay-As-You-Go system.

Communicating Variants					
PPoint Model	S3	S3	S7	S7	S7
Part Number	S3-1C	S3-2C	S7-1C	S7-2C	S7-UC/UP
Socket Electrical compliance	SAE J1772 on 4.8m Cable	IEC 62196 on 4.8m Cable	SAE J1772 on 4.8m Cable	IEC 62196 on 4.8m Cable	IEC 62196 Socket
Rated output	3.6kW		7kW		
Rated current	16A		30A		
Charge Protocol	Mode 3				
Holster	Yes				N/A
GPRS comms ready	Yes				

Warranty

All correctly installed POD Point hardware is covered by our thirty six month limited warranty. Any hardware failure should be promptly reported to us, ideally by e-mail to enquiries@pod-point.com, or by calling our support team on 0207 247 4114 quoting the serial number, location of the product, and giving a brief description of the failure.

Our support team will then investigate, and attempt to remotely resolve the issue. They may ask you to provide additional information to assist in this.

If the issue cannot be resolved remotely, and the product is in warranty, we will make arrangements for one of our team to visit the location and, if the issue is a result of any shortcoming in design or manufacture it will be made good free of charge or, at our option, exchanged for a replacement product.

If we attend site, and the fault is not a result of a shortcoming in design or manufacture of our product, we will make reasonable attempts to suggest what the issue is, and propose a resolution which may have a fee associated with it. A call out fee will be applicable where our product is not at fault.

Limitation of liability


In no event will we accept any liability for any loss, costs or damage consequential on the use and/or misuse of our hardware products except and only to the extent that this is caused by our negligence.

Information Regarding : Car Charging Units

Locations of Proposed Equipment

The units will be mounted adjacent to car parking spaces as specified on the GDM drawings.

Proposed Product : POD POINT Car Charging Units

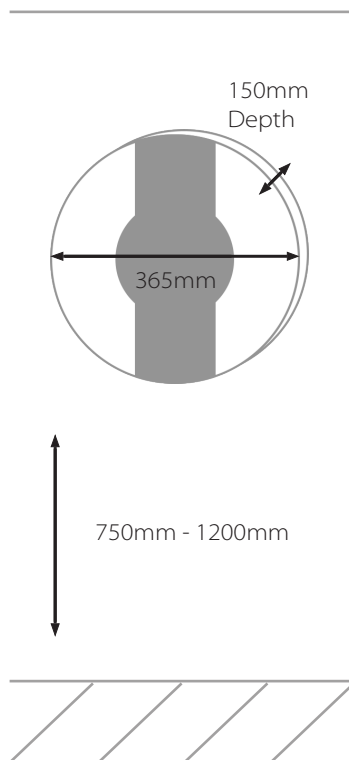
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Fig. 1 POD Point Solo - Socketed Version



Fig. 2 Dimensions and location of unit (150mm depth)



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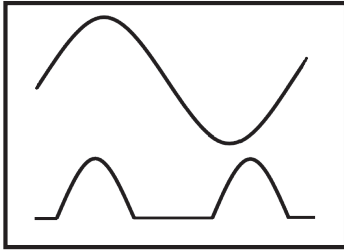
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Fig. 3 Type A RCD Markings



Note for RCD

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1. 3x M8 80mm screws
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Fig. 4 Unit Label



Fig 5. Typical Schematic of installation circuit

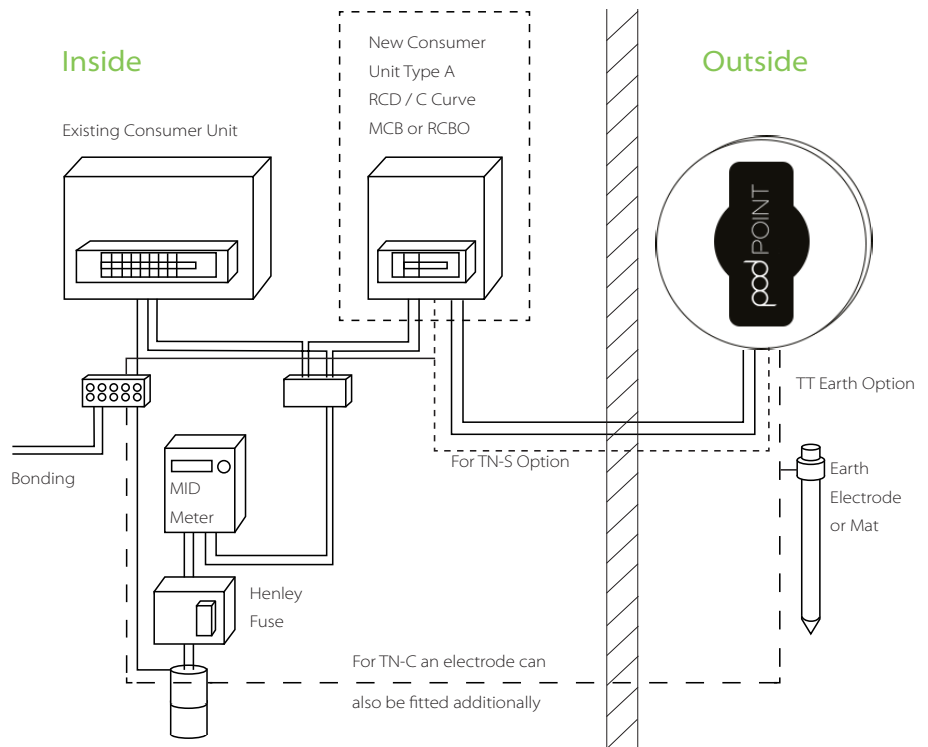


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POD Point Solo

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* Note 1: unit may be connected to PME earth if an additional earth elect code complying with Regulation 544.1.1 of B57671 is fitted to MET.

* Note 2: Where signage is fitted at the rear of the POD Point, the sign should also be connected to earth, see seperate documentation supplied with the sign.

* Note 3: For socketed units fitted inside a garage, consider converting the entire garage to TT.

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

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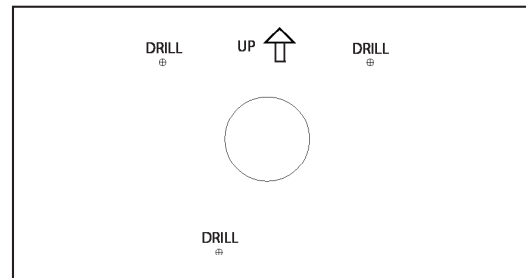
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Fig. 7 Drilling Template



* Back of box insert

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

Fig. 7: Kobling av 1-fas POD Point

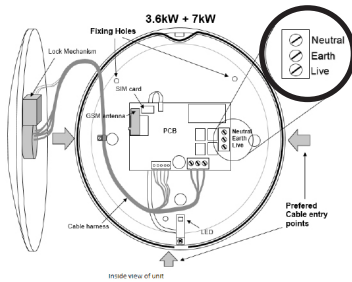
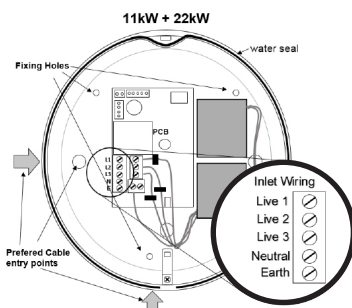


Fig. 8: Kobling av 3-fas POD Point



Note for commissioning

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)

In accordance with 'Part P' of the Building Regulations (England & Wales) all notifiable electrical installation work performed in domestic dwellings must be carried out by a competent electrical installer registered with a government approved Part P Competency Scheme or subjected to verification by the local building control department. In Scotland all work must be carried out by an electrical installer registered with a Building Standards Scheme such as those run by SELECT or the NICEIC.

NOTE: In England & Wales the installation of a new circuit or a connection point for equipment outside of the equipotential zone is notifiable.

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Wiring up the POD Point Solo (See Fig 8-9)

- 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 to allow easy termination so that the PCB terminal are not under strain.
- The choice of entry point used will determine the amount of insulation/SWA that needs to be removed for the internal wiring 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:

- 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.

Before final assembly, appropriate tests shall be performed at the unit connections to confirm the installation is sound.

Commissioning/Registering the unit

Domestic/OLEV installs

On power up of the POD Point Solo the LED's on the front should illuminate in white. When the Communications module has initialised the LED's should change to magenta. When the unit has registered with the Pod Point server the LED's should then go blue with a short magenta flash. This process may take several minutes depending on GSM network and server load. If the LED's remain white for a prolonged period of time there may be no GSM signal or the sim card is not inserted correctly.

Public Used Pod-Points

Visit the PP Install App to commission this unit. If you do not have access to the app, see " Note for Commissioning".

Fitting the front of the Unit

Once the rear unit has been fitted, the wiring to the unit connected and tested, the front cover can be fitted in place. Prior to fitting the front cover, visually check the internal connections, remove any debris that may have entered the unit during installation and check that the front cover mating seal is in place. Place the cover on the housing, using the top fixing as a point of reference, the front cover can then be secured in place at 5 points. The unit is supplied with both pozidriv and T15 pin torx screws if additional security is required.

Final Electrical Testing

To meet the BS7671 (17th edition) requirements for testing of an electrical installation, the following tests and checks shall be performed by a competent electrical installer 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 the continuity of the circuit protective conductors.
- A test to confirm the integrity of the circuit insulation resistance.
- A test to confirm the polarity of the installation is correct.
- Where applicable a test to confirm the earth electrode resistance is within acceptable tolerances (or)
- An earth fault loop impedance test
- 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 (at the rated current and at five times the rated current operating current.)
- 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

POD Point Solo

Single Phase



Cable



Universal

Physical Properties

Dimensions	Ø=360mm, depth=150mm
Standard Colour	Grey & Black
Shipping Weight	5kg
Operating Temp	-30°C to +50°C
Operating Humidity	95% Non Cond
Enclosure Rating	IP54

Electrical Specification

Rated Voltage	230V AC Single Phase
Rated Frequency	50Hz
Over current protection	To be fitted at source
Earth leakage protection	30mA Type A RCD/ RCBO to be fitted at source
Standby power consumption	5W
Standards compliance	LVD 2006/95/EC EMC 2004/108/EC EN 61851 -1 and 22 CE Certified

Contact
020 7247 4114
enquiries@pod-point.com
www.pod-point.com

Installation

POD Point Solo's are designed for installation in either open air or protected environments. The product should be installed by a certified electrician and uses industry-standard mechanical fittings and electrical connections. POD Point can, in some territories, provide a turn-key service for the installation and commissioning of charge points. Note that to validate the product warranty, installation shall be done in accordance with POD Point's guidance and all relevant legislation.

Compatibility

POD Point Solo units are compatible with the Mode 3 charging standard and have been tested with the vehicles listed in the Vehicle Compatibility Section

Connectors and Power Ratings

POD Point Solo units are available with a SAE J1772 gun on a 4.8m attached cable, an IEC 62196 gun on a 4.8m attached cable or with an IEC 62196 Socket with the Mode 3 charging standard.

Status lights

The status of the charge point is shown by coloured status lights.

Management Information System Compatible

Communicating variants of Solo are compatible with the POD Point MIS.

Pay-as-you-go Compatible

Communicating variants of Solo are compatible with the POD Point Pay-As-You-Go system.

Communicating Variants					
PPoint Model	S3	S3	S7	S7	S7
Part Number	S3-1C	S3-2C	S7-1C	S7-2C	S7-UC/UP
Socket Electrical compliance	SAE J1772 on 4.8m Cable	IEC 62196 on 4.8m Cable	SAE J1772 on 4.8m Cable	IEC 62196 on 4.8m Cable	IEC 62196 Socket
Rated output	3.6kW		7kW		
Rated current	16A		30A		
Charge Protocol	Mode 3				
Holster	Yes				N/A
GPRS comms ready	Yes				

Warranty

All correctly installed POD Point hardware is covered by our thirty six month limited warranty. Any hardware failure should be promptly reported to us, ideally by e-mail to enquiries@pod-point.com, or by calling our support team on 0207 247 4114 quoting the serial number, location of the product, and giving a brief description of the failure.

Our support team will then investigate, and attempt to remotely resolve the issue. They may ask you to provide additional information to assist in this.

If the issue cannot be resolved remotely, and the product is in warranty, we will make arrangements for one of our team to visit the location and, if the issue is a result of any shortcoming in design or manufacture it will be made good free of charge or, at our option, exchanged for a replacement product.

If we attend site, and the fault is not a result of a shortcoming in design or manufacture of our product, we will make reasonable attempts to suggest what the issue is, and propose a resolution which may have a fee associated with it. A call out fee will be applicable where our product is not at fault.

Limitation of liability

In no event will we accept any liability for any loss, costs or damage consequential on the use and/or misuse of our hardware products except and only to the extent that this is caused by our negligence.