

Date: 18-10-23

Ref: MN2A-BAF-XX-XX-TS-000006[P03] – EV Chargers

FORM BFES 10/2

To: BAM

For the attention of: James Stockdale

Contract Title: PLOT 9A

Contract No: 5315

TECHNICAL SUBMISSION

T.S. NO: 000006

Dear Sirs

We are pleased to submit the following for your approval by : Date: 31-10-23

Equipment:	EV Chargers
Manufacturer:	Project EV
Description:	EV Chargers to be installed within basement car park. 5No wall mounted units (EVA-22S-SE-RFID) serving 5no car park abys & 1No wall mounted unit (EVD-40D-P-CC) with 2no plugs serving 2no bays. Total number of car charges equates to 6No which server 7no bays inline with stage 3 documentation & B&F latest drawings.
Specification References:	MN2A-CDL-XX-XX-SP-N-090300
Drawing References:	
Note	The attached 40KW DC output charger will achieve 190-200KM per hour You cannot use 22KW AC chargers to get the desired output, as with AC chargers the charge time is based on the inverter of the car. DC charger they are factory built as either CCS or Chademo – Our proposal is for CCS as this is used for more than 95% of EV cars

Attached detail documents:

Manufacturers Data:	☒
Manufacturers Leaflet:	☐
Manufacturers Drawings:	☐
Electrical Requirements:	N/A

For Briggs & Forrester Engineering Services Ltd

Haz El-Ahwany

Approved/Approved with Comment

Date:

Comments:

CONTRACT TITLE: FIRST STREET PLOT 9A

EV CHARGERS

CONTRACT NO: 5315

SUBMISSION NO:	DESCRIPTION	DATE COMMENT REC'D	CLIENT COMMENTS / DESIGN TEAM COMMENTS / BRIGGS COMMENTS	RESOPNSE	OPEN/CLOSED/RESPOND
MN2A-BAF-XX-XX-TS-E-000006	EV Chargers		Client Comments - Carl Wells		
		14.04.23	P01 - Status C - Suggest that the system needs to be discussed and agreed with the client regarding the functionality of the system as part of a samples review. More commentary required to address and confirm that the proposals meet the requirements of the specification.	1)Purpose of technical submittal is for client to review to ensure they are content with product and operation. We will struggle to obtain sample car chargers to put in front of client however we are happy to arrange a workshop if required. Specification calls for car chargers to 7No bays within the basement level and to have a LMS system. Specification also calls for 5no bays to be fast charging and 2No bays to be superfast charging. Our offer complies this with 5no fast changers and 1no superfast charger that satisfies 2no bays.	CLOSED
		12.04.23	Client Comments - Chroma (S Hume) P01 - This schedule is just a product brochure from Project EV. The EV chargers stated within the basement small power layout do not match with any of the chargers shown in the product brochure so this document does not make much sense. The MEP specification also does not state what type of EV chargers are to be fitted.	2)We have update our technical submittal to provide further detail on the selected products and quantity. For clarity we confirm that we are proposing 5No wall mounted units (EVA-22S-SE-RFID) serving 5no car park bays & 1No floor mounted unit (EVD-60D-CC) with 2no plugs serving 2no bays. Total number of car charges equates to 6No which server 7no bays in line with stage 3 documentation & B&F latest drawings. The proposal complies with the Cundall stage 3 specification and ER's. The LMS is undertaken via a cloud based static load balance. RJ45 will be located at each of the chargers to ensure connection to the cloud.	CLOSED
		15.05.23	Client Comments - Carl Wells P02 - Status C - Please confirm that the 22kw chargers are charging Mode 3 and sockets to be Type 2. Please confirm the 60kw chargers are charging mode 4 and socket outlet type CHAdEMO Ers states the chargers are to be wall mounted. Please confirm there is suitable mounting location and cable routes to the proposed floor standing unit.	Our 22kw chargers are mode 3 type 2, Gavin can you confirm if the DC chargers are mode 4. Our 60KW DC chargers are floor mounted. On the 60 floor mounted, the cable entry is through the base of the charger. We do offer a 40kw DC charger, single or twin outlet. On this the entry is at the bottom of the unit.	CLOSED
		12.05.23	Client Comments - Shaun Hume (Atkins) Having reviewed the information I would suggest that Cundalls matches up the information they described with what they have shown in the basement small power layout MN2A-CDL-ZZ-B1-DR-E-020990. For example the size of the 22kW EVA-22S-SE-RFID charger matches the isolator sizes they have shown but seem to be referencing what I assume is an out of date or different manufacturer charger. They have indicated on the attachment you sent that they are only going to fit a single 100kW EVD-60D-CC charger yet the small power layout MN2A-CDL-ZZ-B1-DR-E-020990 indicates two of these chargers. Can they confirm which quantity is correct?	Latest information on BIM360 for review.	CLOSED
			Client Comments - Shaun Hume (Atkins)		

		23.05.23	Level B - Proceed subject to amendment as noted. The response that only 1No floor mounted unit (EVD-60D-CC) is to be fitted yet from the Cundalls Stage 3 small power layouts & specification that we have it states that two of these types of chargers are to be fitted. If only one type of this fitting is to be installed will the stage 3 specification & layouts be updated or shall this be picked up in the next stage of design?	CDP Specialist - 7No car chargers shown at stage 3 for 7No bays. 5No fast and 2No superfast. We are providing 5No fast and 1No superfast which serves 2No bays.	CLOSED
		19.05.23	Client Comments - Chris Smith (CHROMA)		
			Please close out Cundall Comments	Completed	CLOSED
			Design Comments - JMA		
		03.05.23	1. P02 - JMA Status B - Please confirm positions of chargers on plan for review. Comments only on architectural integration, no comment on technical performance.	Position of chargers are shown on Small power drawings MN2A-BAF-ZZ-B1-DR-E-209901 & MN2A-BAF-ZZ-B1-DR-E-209902 (Data Point Position) Latest drawings will show Power.	CLOSED
			2. P02 - Where is this floor mounted unit located? If proposal is to be on hatched area of space it could be an issue with access requirements - suggest could be swapped with single chargers to be positioned off the hatches. Please confirm proposal.	Revised proposal is for 40kW wall mounted	CLOSED
			3. P02 - Please confirm containment strategy for floor mounted unit - no floor build-up zone in basement - Where are the cable terminations/fed from.?	Revised proposal is for 40kW wall mounted	CLOSED
			Client Comments - Chris Smith (CHROMA)		
		06.10.2023	Proposed chargers are acullay 2 No. DC 3 phase supplied- fast chargers are 5 no. AC 3phase supplied regular chargers. Proposed 60kW DC fast chargers will be load manged. Down to 44kW so theyshould charge battery at approx 190-200 km per hour (until 80% Battery capcity) while proposed 22kw Cahrgers should charge at rate of 120km per hour. If instead of three phase AC chargers single phase (7.4kW) wre to be chosen they'd be charging at pace of 40km per hour much depends on EV battery regarding loading speeds	The attached 40KW DC output charger will achieve 190-200KM per hour You cannot use 22KW AC chargers to get the desired output, as with AC chargers the charge time is based on the inverter of the car. DC charger they are factory built as either CCS or Chademo – Our proposal is for CCS as this is used for more than 95% of EV cars	CLOSED

EVA-22S-SE-RFID



22kW Pro Earth Wall AC Charger Single Gun RFID
[32a Three Phase]

The Future of EV Charging

The EVA-22S-SE-RFID is a three-phase, fast AC electric vehicle charger, that comes with built-in Pro Earth protection, meaning the charger does not require the addition of a costly earth spike installation.

Our 22kW pro earth charging unit comes packed with features as well as a market-leading five-year warranty. Complete with a compact sleek design and solar compatibility; this charger also has time-shifting capabilities giving you the opportunity to save £100's per year*. With the charging unit's integrated cable locking feature you can ensure total protection, granting safety and convenience tethering the charger, cable, and vehicle all together securely.

The EVA-22S-SE-RFID is ready out of the box and perfect for any domestic electric vehicle charging. The RFID unit comes with one RFID card as standard, with additional RFID cards (EV-RFID) available for purchase. Optional ground mounts (EV-GMEVA-S-2) & optional floor stands (EV-FLRSTAND) are available to purchase.



**TYPE 2
SOCKET**



**PRO EARTH
NO SPIKE REQUIRED**



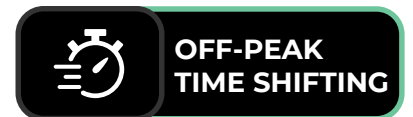
**CABLE LOCK
SYSTEM**



**5 YEAR
WARRANTY**



**RFID
CONTROL**



**OFF-PEAK
TIME SHIFTING**



METHODS OF CONTROL

Plug & Charge - Project EV's ethos is to make charging electric vehicles easy and stress free for all. With the Plug and Play mode you do not require any additional software or applications to control your EV charge point, you simply plug your car into a Project EV device, and the charge begins.

RFID - RFID Mode Charging is an easy simple way for users to control their EV Charge Point with a swipe of a card. One RFID card is supplied as standard, however extra cards can be supplied for those interested in public charging.

Project EV App - The FREE Project EV App allows you to choose and customise charging rates, prioritise off-peak charging to maximise savings (including via a solar charging mode) and create charging records; so you can see and control all your data.

Project EV Pro App - The Project EV Pro App is a unique EV charging platform, providing you the ability to utilise public charging capabilities and manage and control multiple chargers - from which you can generate a fluid revenue stream.



Note - EVA-22S-SE-RFID Datasheet - Information correct as of 10/21

*The amount of potential savings you can save per year depends on your energy provider, and your set energy tariff rates.

Input & Output

Input Amps	32a Three Phase
Input voltage	415V AC
Input frequency	50HZ
Output voltage	415 AC
Max. output power	22KW
Max. output current	32A per phase
Charging interface type	IEC 62196-2, Type 2

Protection

Over voltage protection	✓
Under voltage protection	✓
Over load protection	✓
Short circuit protection	✓
Earth leakage protection	✓
Over-temp protection	✓
Surge protection	✓
PEN fault protection	✓

Function & Accessory

LCD	Yes
Ethernet/WIFI	Yes/Yes
Outlet Type	Type 2 (socket)
RCBO	Type A +6mA DC fault current protection (Equivalent to Type B)
LED Indicator light	✓
Emergency stop button	✓
Intelligent power adjustment	Opt.
RFID	✓

Working Environment

Protection degree	IP65
Environment temperature	-25°C~+50°C
Relative humidity	0-95% non-condensing
Cooling	Natural air cooling
Standby power consumption	<8W
IK Rating	IK10

Mechanical

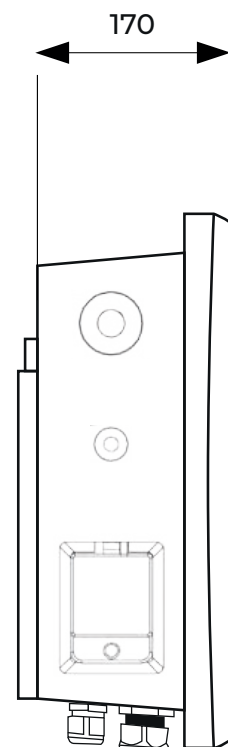
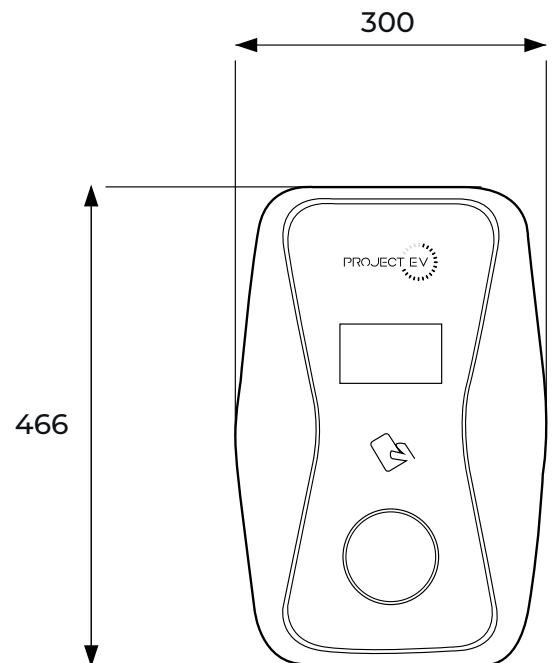
Dimension (W/H/D)	300/465/170mm
Weight	<9KG

Mounting & Accessories

Wall-mounting	Standard
Floor-pole	Opt. EV-FLRSTAND
Ground-mounting	Opt. EV-GMEVA-S-2

Certification

CE	✓
SA8000 Accredited	✓
OZEV Approved	✓



EVD-40D-P-CC



40kW Wall DC Charger Dual Gun RFID
[CCS x2]

The Future of EV Charging

The EVD-40D-P-CC is a three-phase, commercial DC charging unit, featuring two CCS guns.

With it's high power, it's an ideal small-scale commercial charging unit that is also compatible with our bespoke app, allowing for easy fleet and cost management - as well as being able to manage load balancing for larger scale charging across multiple vehicles.

The RFID unit comes with one RFID card as standard, with additional RFID cards (EV-RFID) available for purchase. Optional floor stands (EV-FLRSTAND-40D) & optional ground mounts (EV-GM40KW-2) are available to purchase.



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Input & Output

Input Amps	63a Three Phase
Input voltage	230~415V AC
Input frequency	50/60HZ
DC outlet type	CCS x2
Output voltage	250-750V DC
Max. output power	40KW
Max. output current	80A DC
Voltage accuracy	<±0.5%
Current accuracy	≤±1%
Ripple coefficient	RMS: ±0.5%;Peak: ≤±1%
Meeting accuracy	0.5%
Efficiency	≥95.2%
Cable Length	5m

Protection

Over voltage protection	✓
Under voltage protection	✓
Over load protection	✓
Short circuit protection	✓
Earth leakage protection	✓
Over-temp protection	✓
Surge protection	✓

Function & Accessory

Display	7 inch screen
Ethernet/WIFI/4G	Yes/Yes/Opt
RCBO	Type A +6mA DC fault current protection (Equivalent to Type B)
LED Indicator light	✓
Emergency stop button	✓
Intelligent power adjustment	Opt.
RFID	✓

Working Environment

Protection degree	IP54
Environment temperature	-20°C~+50°C
Relative humidity	5%-95% non-condensing
Cooling	Forced air cooling
Standby power consumption	<25W
Noise emission	≤65db
IK Rating	IK10

Mechanical

Dimension (W/H/D)	540/760/271mm
Weight	94KG

Mounting & Accessories

Wall-mounting	Standard
Floor-pole	Opt. EV-FLRSTAND-40D
Grout-mounting	Opt. EV-GM40KW-2
Dynamic Load Management	Opt. EV-TPM-200A

Certification

CE	✓
SA8000 Accredited	✓
OZEV Approved	✓

