10 ELECTRICAL SYSTEMS

10.7 ELECTRIC VEHICLE (EV) CHARGING

STANDARD STORE SITES SHALL HAVE TWO DEDICATED EVCP BAYS, PLANNING CONSENT MAY REQUIRE ADDITIONAL BAYS.

REFER ALSO TO ALL NEW MOTION INSTALLATION AND CONNECTON GUIDES PRIOR TO DESIGN FINALISATION AND INSTALLATION COMMENCEMENT.

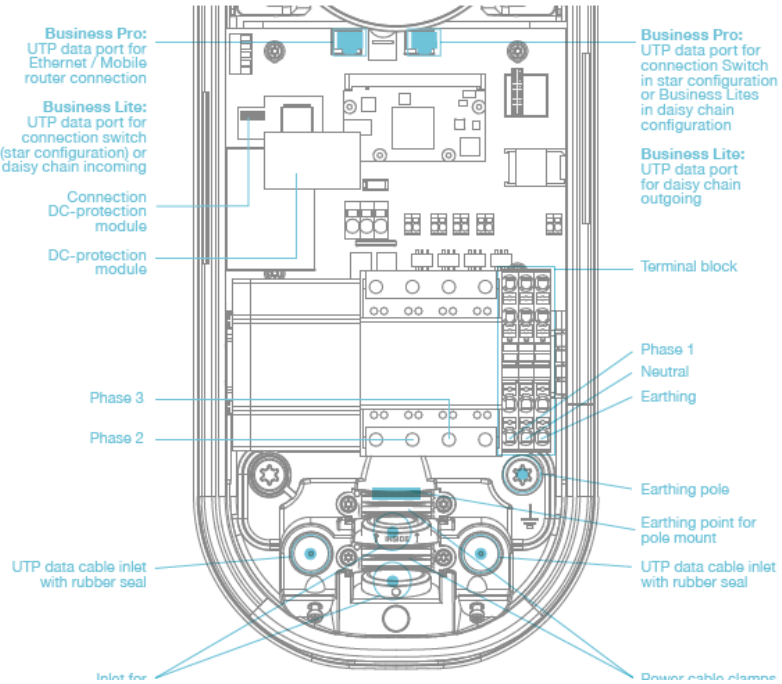
Electrical Contractors shall use the Template purchase order form attached to this specification to order the EVCP's from New Motion (Aldi nominated supplier).

Electrical Contractors shall Include for installation, connection, testing and attendance for the commissioning (By New Motion) of EV charging units, specified currently as:

- Shell New Motion **Business Pro** and **Business Lite**
- 2 x 22KW (2 x 32A TPN) @ 400v

Each two charging bays shall be provided with 1 x **Business Pro** and 1 x **Business Lite** on a single steel post. The **Business Pro** shall be linked to the **Business Lite** by a Cat5e patch lead 500mm long for communication purposes.

For wall mount projects, EVCP's are to be mounted on the New Motion wall bracket and duct rated cat5e patch lead between the two units.



Underground duct routes shall be installed by others but set out to the project external electrical drawing with draw cords for future use.

Setting out of the units will require any equipment connected to a different earthing system (eg lighting column) being a minimum of 3mts away from the edge of the EVCP bay.

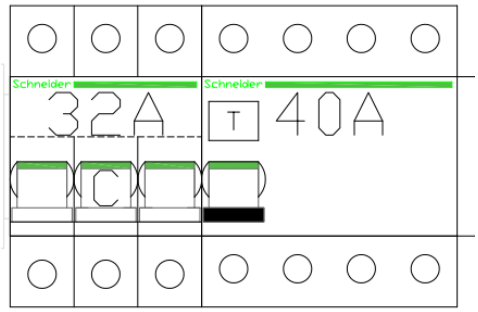
Ducting and access chambers shall be installed to enable **six** spaces in total.

The electrical contractor shall provide and install all outlet boxes, containment and power supplies required for the EV charger as indicated on the drawings and described.

The electrical services to the EV charger shall be derived from Distribution Board B, 24hour section (8TPN and 9TPN allocated).

The EVCP's will require connection to a separate TT type earthing system and not the main store supply PME system. (If entire store is a designated TT system then further separate rods etc shall not be required).

Circuit wiring - 4 core 10mm LSF/SWA/XLPE
Max. circuit distance – 100m. (Over 100m regional consultant shall recalculate and advise).
Protective Devices – 32A Type C TP MCB + a separate 40A Type A RCD located in the main panel, DB B, 24 hour section, eg:



Steel wire is not to be exposed when making off the SWA, insulate the Steel wire so this cannot be in contact with any part of the post or EVCP. Install earthrods near to the charging point to a max of 100 Ohms and utilise for the main earth to the Charging points. The quantity of earthrods required will be determined on site until the 100 Ohms is achieved. This is required when there is a standard PME supply into the building.

Underground services will need to be taken into account and traced before any rods are installed.

Initially these circuits shall feed two EVCP Points mounted on a single steel post, with two feeds complying to IEC 60950, BS7671 latest edition and IET code of practice for electrical vehicle charging equipment installations.

The EV charger shall be protected by a suitable bollard or fixed loop supplied and installed by others.

The EVCP Post will need fixing down by the four fixing holes into a suitable base (By Others) 8mm x 120mm long chemical fixings will be required. Post must be plumb level and fixed securely.

All services shall be clearly marked as per BS7671:

514.15.1 Where an installation includes alternative or additional sources of supply, warning notices shall be affixed at the following locations in the installation:

(i) At the origin of the installation
(ii) At the meter position, if remote from the origin
(iii) At the consumer unit or distribution board to which the alternative or additional sources are connected
(iv) At all points of isolation of all sources of supply.

The warning notice shall be durably marked in legible type not smaller than that illustrated here and shall read as follows:

WARNING – MULTIPLE SUPPLIES

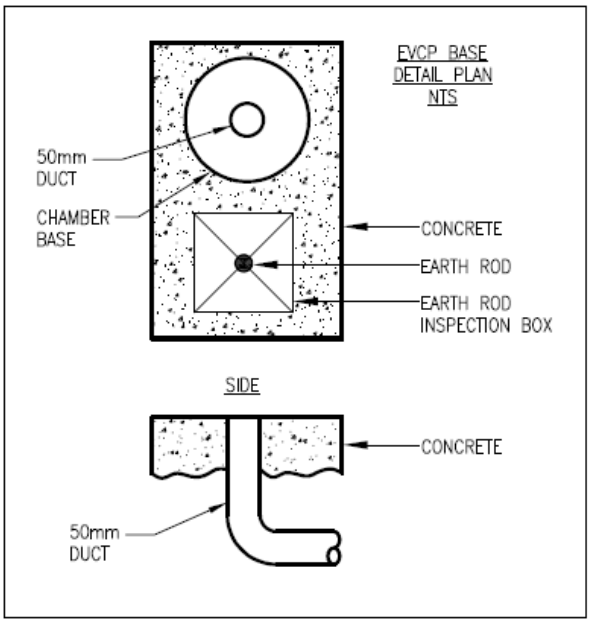
Isolate all electrical supplies before carrying out work.

Isolate the mains supply at .....

Isolate the alternative supplies at .....

Groundworks (By Others) – To install a concrete base, **level** and min. 300m deep (refer to structural engineers' guidance for base detail) with a 50mm duct from an inspection chamber not more than 2mts away from the EVCP.

Earthrod inspection chamber (supplied by the Electrical Contractor) to be installed behind, or in the base. Steel Protection posts installed by groundworkers, supplied as part of the New Motion package. See suggested GA below.

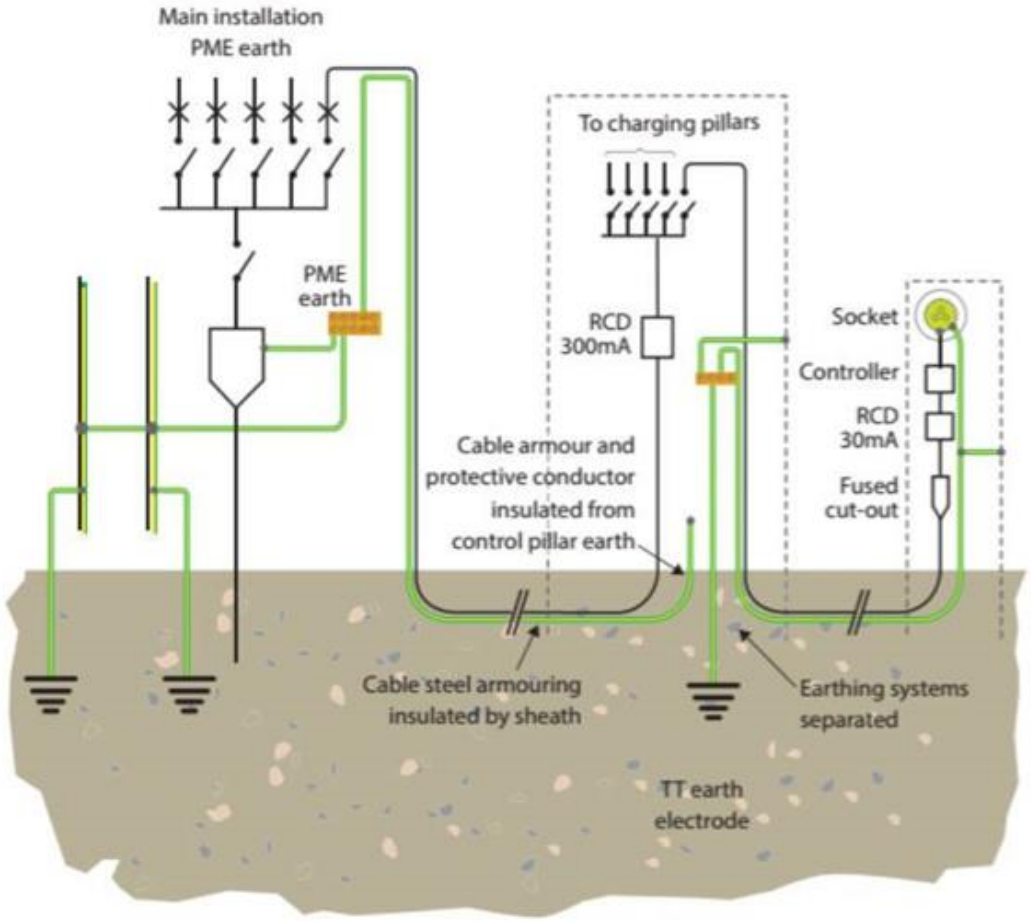


Multiple Charger Installations

Where more than one dual EV charging post is required, a feeder pillar shall be installed containing a suitably sized and rated TP&N distribution board supplied from the Main LV panel MCCB section.

Feeder pillar shall be heavy duty galvanised construction fixed down to a prepared concrete base. Base to be complete with 100/150mm duct entries.

Sub-main and sub circuit cable and protective device sizes shall be assessed on a project specific basis.



General Arrangement (FEEDER PILLAR)

1) Sub Main cable sized by Consultant, Electrical Contractor to request this information when ducting is complete, and an accurate cable measure can take place.
2) SWA when entering feeder pillar DB shall be terminated into a PVC stuffing gland, with the steel wire not touching any parts of the metal case. If a separate CPC is required, this also needs terminating into a plastic adaptable box and clearly labelled.
3) Main switch on the feeder pillar DB needs to be a 100amp 4pole RCD 300ma.
4) Outgoing Circuits to the Charging points are to be on 40amp type D MCB's.
5) Generally, when the Feeder Pillars are within 20mts of the Charging points a 10mm 4 core SWA shall be used for the circuits required into each EVCP. If this is further, please contact the Electrical consultant for the cable size.
6) Earthrods need to be installed to achieve Max 100 Ohms when all connected together, this will need to be reviewed onsite to determine the amount of rods required. As a starting point install **one** rod per charging point.
7) All metal work, rods to be connected together from the feeder pillar to the Charging points, main feed earth from store is to be kept separate at all times.
8) Feeder Pillar and Charging Points must be 3m away from any other circuit which is being fed from the store main panel. Eg. Lampposts.
9) Note requirements for phase rotation on multi-charger installations.



Email completed forms to:
Key Account Manager

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5 Southampton St
London
WC2E 7HA

a.mccleave@newmotion.com
Alan McCleave
T - 0203 936 4027

New Motion Electric Charging Point
PURCHASE ORDER

Date		**Purchase Order No.**	

Store Number / Name	
Store / Delivery Address	

Delivery Date Onsite		
Receiving Contractor Name		
Receiving Contractor Contact No.		
New Motion Commissioning Date. Engineer Onsite.		

Product Description	**Quantity Required**	**Cost**	**Total**
Dual Post, To Include Pro, Lite And Post.		£1,584.20	£0.00
Warranty 5 years		£170	£0.00
Delivery Charges		£100	£0.00
Guard Rail		£250	£0.00
Branding (Per Unit) Dual Post = 2		£10	£0.00
Subsciption (Tech support 12 months)		£48	£0.00
Fit & Commissioning		£450	£0.00
		Total	£0.00

ALDI Stores Limited

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Copies To Construction Management QS;