



Prerequisites For AC Mini Plus Charger

1. Objective:

This document is prepared to share the prerequisites for creating the EV Charging infrastructure and to ensure the availability of infrastructure, space & resources for a specific project.

2. Prerequisites:

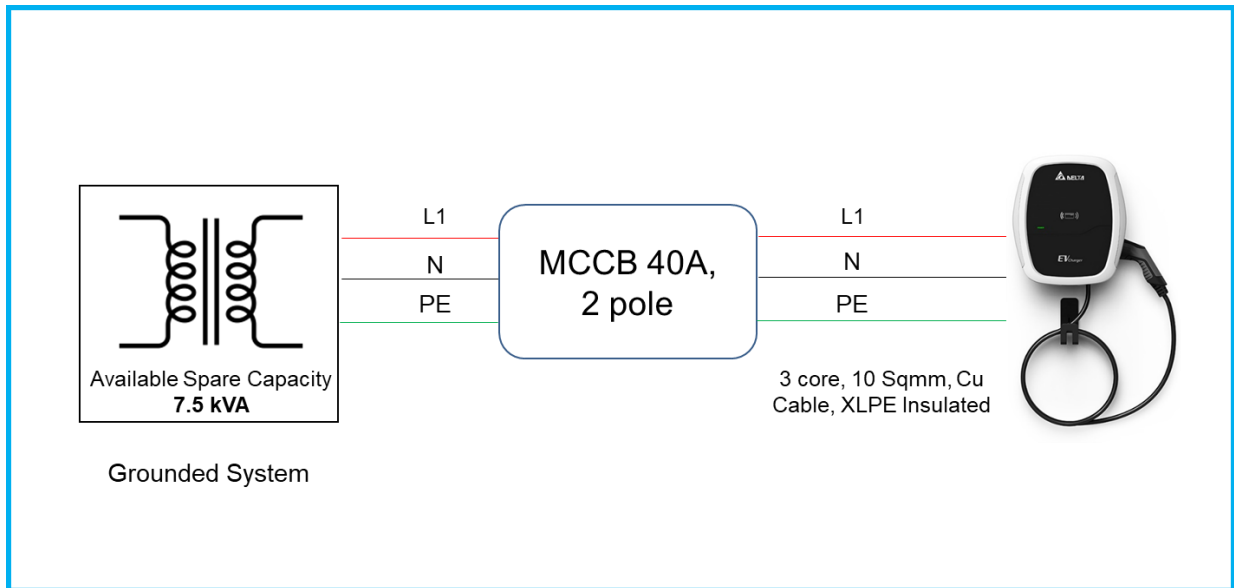
2.1 Space and Foundation

Sr. No.	Item	Requirement	Availability
1	EV Charger Wall Mounting / Standee Height	1184 mm (3.9 Feet)	
2	Clear Space requirement around the system in mm	Front: 200 mm Side: 100 mm	
3	Vehicle Parking Space	As per no. of vehicle	
4	Rain Shade	Optional	

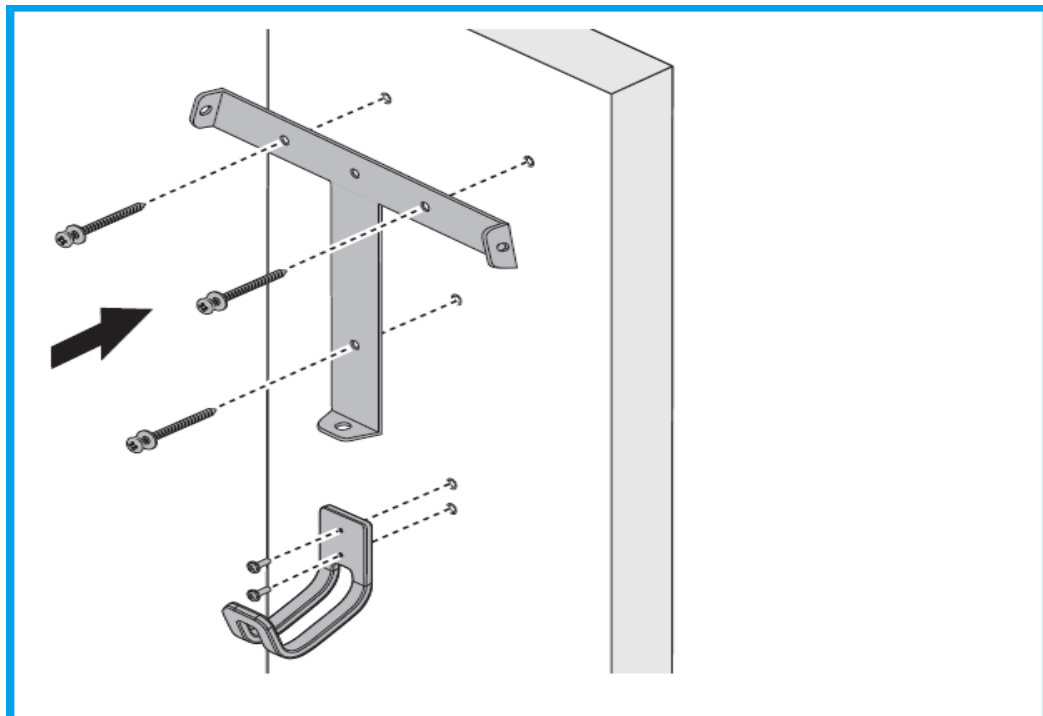
2.2 Upstream Connection:

Sr. No.	Item	Requirement	Availability
1	Electricity Connection	1 Phase, Neutral and Earth	
2	Power Capacity (kVA)	7.5 kVA	
3	AC Voltage Range	230 ± 10%	
4	Power Cable with Gland and Lugs	3 Core, 10 Sq.mm Cu Cable, XLPE Insulated PG25 gland and Lugs	
5	Earth Cable	Not Required	
6	AC Distribution/ LT Panel distance from EV Charger	<10 meter	
7	Dedicated Transformer	No	
8	MCB/ MCCB Rating	2 Pole 40A Class C	
9	Meter Box	Yes	
10	Dedicated Earthing	Yes	
11	Earthing Resistance	< 5 Ohms	

2.3 Proposed Layout:



2.4 Proposed Standee Schematic:



Wall Mounting/ Standee Schematic

EV charging infrastructure design Guideline:

All EV loads are connected to a new/existing Main Low Voltage Switchboard (MLVS).

- Each EV circuit is protected by a circuit breaker(MCB/MCCB/ACB) and a 30mA type B residual current device (RCD), as required by IEC 60364-7-722 (check whether an RCD is already integrated into the EV charging station) with **Dedicated Earthing**.
- EVSE should be protected against transient overvoltages due to lightning strikes. Surge protection devices may be required on the EVSE depending on the building's lightning protection, the location of the EVSE (indoor or outdoor), and the distance between the EVSE and the SPD at the LV switchboard.
- As there are several EVSE located in the same area (small parking), it could be worth installing a LV sub panel nearby for these EV loads in order to optimize the quantity and length of cables.
- As there are several EVSE located in the same area (larger parking), a busbar trunking system can be used to provide a flexible, cost effective and future proof solution.
- As the existing dealership/standalone site installation are connected to the new main LV switchboard, overcurrent and residual current protection selectivity need to be considered.
- The new EV loads increase the power demand significantly. An additional photovoltaic system and storage can help to partially compensate for the increased power demand.

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