SOLUTION SHEET

E-mobility Compact Secondary Substation (CSS)

GRP or steel enclosure to enable EV charging

Internal arc tested to IEC62271-202, a safer design for equipment, personnel and public environment

Factory-delivered solution with external connection completed at site results in reduced installation time

Compartmentalized design ensures authorized access and increases safety

Digital solutions can be included to provide connectivity for remote monitoring and controlling

E-mobility Compact Secondary Substation

The growing need for electric cars and charging in high power demands more flexible elements for electric networks. The E-mobility CSS provides connection to the medium voltage network and is an ideal solution when EV chargers are in a public area and the transformer is up to 2000 kVA. The transformer layout can be with one secondary winding or with multiple secondary windings, to enable all charging technologies. For larger transformers, the CSS can be provided on a skid with external transformer. The CSS is internally arc tested according to standard IEC 62271-202.

Features of solution

- Available in multiple enclosure materials:
  - Steel for rural areas
  - Glass reinforced polyester (GRP) for harsh and challenging environmental conditions
- Internal arc tested design assures high safety standards for service personnel and public
- Lockable enclosure to prevent unauthorized entry
- Compact design makes it ideal for space restricted installations
- For GRP option:
  - Fire tested according ISO 834
  - Flammability according UL 94
  - Toxicity according EN 45545

Equipment description

The CSS typically houses medium voltage switchgear (up to 40.5 kV), transformers (oil or dry type) and low voltage switchboard with protection devices, ie circuit breakers or fused disconnects. The CSS is compartmentalized to isolate the MV and LV sections to reduce risk of accidental handling.

Technical data

Key specifications	
Medium voltage level	from 6.3 - 40.5 kV
Typical ratings (kVA)	up to 4000 kVA
Secondary voltage	400-480 V
Trafo type	Oil or dry
Protection degree	IP 54/23D (SWGR/trafo)
Applicable standards	IEC, GB, AS, GOST, ANSI, CSA, and more

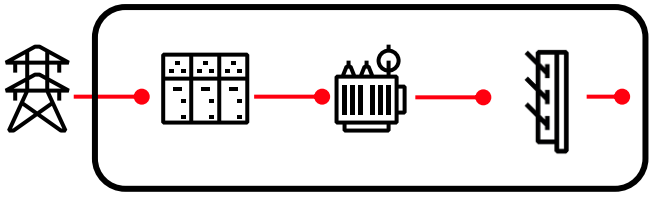
Optional equipment

- Seismic certifications
- IP35 or IP45 protection
- Added ventilation
- Remote monitoring
- Remote monitoring & control

Installation

- One-piece delivery factory assembled and tested
- Solutions with foundation and oil pit, or without foundation
- Reduced site works
- Compact design for reduced footprint
- Utility homologated solutions

Single line diagram



E-mobility Compact Secondary Substation

ABB Ltd.

www.abb.com/mediumvoltage/

1VPD110001A0459 REV A MAY 2019