UniPack

Compact Secondary Substation
Concrete Monoblock Housing
Orion 1000M
Primary Voltage: up to 36 kV
Power Rating: up to 1000 kVA
Definition

Compact Secondary Substation (CSS) is a type tested assembly comprising of an enclosure containing Medium Voltage switchgear, Distribution transformers, Low Voltage switchboards, connections and auxiliary equipment to transform energy from medium to low voltage systems.

Layout

<table>
<thead>
<tr>
<th>Model Number</th>
<th>Maximum kVA</th>
<th>Rated kV</th>
<th>Maximum Number of MV Switchgear panels</th>
<th>MV Switchgear Insulation Type</th>
</tr>
</thead>
<tbody>
<tr>
<td>CSS-C.12.1000</td>
<td>1000</td>
<td>12</td>
<td>4 / 1</td>
<td>Gas / Air</td>
</tr>
<tr>
<td>CSS-C.24.1000</td>
<td>1000</td>
<td>24</td>
<td>4 / 1</td>
<td>Gas / Air</td>
</tr>
<tr>
<td>CSS-C.36.1000</td>
<td>1000</td>
<td>36</td>
<td>4</td>
<td>Gas</td>
</tr>
</tbody>
</table>

- 12 kV rated CSS can be applied at 13,8 kV
- 24 kV rated CSS can be applied at 25 kV
- 36 kV rated CSS can be applied at 40,5 kV

Features

- Type tested per latest IEC 62271-202
- Internal Arc fault Type A-B tested at 20 kA, 1 s
- High level of safety for equipment and personnel
- All equipment inside CSS are type tested
- Engineered footprint meeting required clearance standards
- Oil collection pit underneath the transformer to collect up to 100% of the transformer’s oil
- Concrete monoblock housing
- Can be lifted with transformer installed
- Engineered for smooth air flow and natural cooling
- Locking system for all doors to prevent unauthorized entry of personnel
- No access to live parts
- Steel parts are tested according to ISO 6988 for corrosion resistance
- Factory tested
Equipment Description

**Transformer**  
CSS is designed and manufactured to install dry or oil transformers.

**Medium Voltage**  
CSS can be provided with air or gas insulated switchgear.

**12, 24, 36 kV**  
Air insulated switchgear: NAL 12 kV  
SF6 insulated switchgear: SafeRing, SafePlus  
On demand other types are also possible.

**Low Voltage**  
LV switchboard can be equipped with breakers, disconnectors or LBS as the main incomer with ratings according to transformer size. Outgoing feeders can be CB’s, fuse switches or disconnectors with quantity and ratings per customer needs.

Metering, control & monitoring systems are available upon request.

Additional equipment

- SCADA ready for easy connection to any SCADA System through standard communication protocols.
- Remote Terminal Unit (RTU) for CSS remote operation, monitoring, data storage and fault analysis.
- A CSS network allows supervision and operation from a central office by utilizing end user communication infrastructure and ABB distribution automation devices.

General technical data for all ratings

- IP for transformer compartment, MV/LV compartments: IP43
- CSS enclosure thermal class: 15 K
- MV cable size and cabling: Al or Cu; Cross section per short circuit requirement
- MV terminations: Pre-molded, cold shrink, heat shrink
- LV connections: Busbar or cable as per requirements
## Technical Data

<table>
<thead>
<tr>
<th>Description</th>
<th>UniPack Compact Secondary Substation – Orion 1000M</th>
</tr>
</thead>
<tbody>
<tr>
<td>Max kVA</td>
<td>1000</td>
</tr>
<tr>
<td>Rated voltage (kV)</td>
<td>12 / 24 / 36</td>
</tr>
<tr>
<td>Short circuit withstand current of internal earthing network</td>
<td>14 kA / 1 s (28 kA peak), upon request 20 kA / 1 s</td>
</tr>
<tr>
<td>Substation dimension (L x W x H)</td>
<td>3300 x 2600 x 2730 mm</td>
</tr>
<tr>
<td>Weight of substation excluding transformer</td>
<td>12 000 kg</td>
</tr>
<tr>
<td>Transformer compartment dimension (L x W x H)</td>
<td>1850 x 1760 x 2200 mm</td>
</tr>
<tr>
<td>Maximum total transformer losses</td>
<td>12 000 W</td>
</tr>
<tr>
<td>CSS enclosure thermal class</td>
<td>15 K</td>
</tr>
<tr>
<td>Maximum outgoing feeders in LV compartment</td>
<td>1600 mm bus bar space (e.g. fitting max 16 pieces of NH2 size fuse switch)</td>
</tr>
<tr>
<td>Rated current of LV panel</td>
<td>400 A, 630 A, 1250 A, 1600 A</td>
</tr>
<tr>
<td>Maximum short circuit withstand capacity of LV panel</td>
<td>25 kA / 1 s 36 kA / 1 s</td>
</tr>
</tbody>
</table>

## Contact Us

ABB Mérnöki, Kereskedelmi és Szolgáltató Kft.
H-1138 Budapest, Váci út 152-156.
Phone: +36 1 443 2132
Fax: +36 1 443 2288
E-mail: hu_css@hu.abb.com
www.abb.hu