Outdoor MV switchgear and controlgear substation

MV/LV Transformer Substations for Distribution Network Solutions

Up to 40.5 kV  IEC standards

Reliable innovation. Personal solutions.
Preface
The Ormazabal cms.m is a kiosk-type prefabricated metal switching and breaking substation, non-walk-in type outdoor substation, installed at ground level, small in size, standard-built, tested and supplied from the factory as a single unit.

cms.m is designed for installations in electrical networks of rated voltage of up to 40.5 kV in alternating current. Its reduced weight and dimensions enable easy handling and transport.
cms.m can be supplied fully assembled with a replaceable voltage transformer HV fuse protected and IAC tested, for LV auxiliary supply or LV measure.

Technical data

**Outdoor, fully gas-insulated MV switchgear with an independent metal enclosure with front access:**

- **Up to 24 kV:** cgmcosmos or ga systems
- **Up to 40.5 kV:** cgm.3 system

**Medium-voltage interconnections**

**Earthing circuit connection**

**Technical specifications**

<table>
<thead>
<tr>
<th>Rated voltage [kV]</th>
<th>24</th>
<th>36-40.5</th>
</tr>
</thead>
<tbody>
<tr>
<td>Frequency [Hz]</td>
<td>50</td>
<td>60 Hz</td>
</tr>
</tbody>
</table>

**MV Switchgear**

<table>
<thead>
<tr>
<th>Rated current [A]</th>
<th>cgmcosmos</th>
<th>ga</th>
<th>cgm.3</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>400 / 630</td>
<td>630</td>
<td>400 / 630</td>
</tr>
<tr>
<td>Short-time current [kA / 1 s]</td>
<td>16 / 20 / 25*</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Internal arc classification (optional)**

IAC Class AB – 20 kA 1 s

(*) in cgmcosmos and cgm.3

**External dimensions and weights**

<table>
<thead>
<tr>
<th></th>
<th>cms.m-3f</th>
<th>cms.m-4f</th>
</tr>
</thead>
<tbody>
<tr>
<td>Length [mm]</td>
<td>1404</td>
<td>1404</td>
</tr>
<tr>
<td>Width [mm]</td>
<td>1766</td>
<td>2296</td>
</tr>
<tr>
<td>Height [mm]</td>
<td>2224</td>
<td>2224</td>
</tr>
<tr>
<td>Weight* [kg]</td>
<td>845-1025</td>
<td>1085-1415</td>
</tr>
</tbody>
</table>

(*) Weight depending on MV diagram and without optional elements

Safety

- High personnel safety:
  - Optional: IAC Class-AB 20 kA 1 s; tested according to IEC 62271-202
  - IP34D: MV enclosure

Reliability

- Fully factory-assembled
- Product tested as a unit
- Corrosivity category C4 H (ISO 12944-1)
- Ventilation grilles with dust-collection filter
- Self-ventilating cover with insulation chamber

Efficiency

- On-site quick and simple replacement
- Easy to transport and operate

Sustainability

- Reduced visual impact
- Reduced dimensions and weight

Continuous innovation

- Transportable in sea container HC 40’ (up to 8 units)
- Version for PV applications
- Optional voltage transformer (two phase 600 VA/three phase 300 VA) HV fuse protected, for 230 Vₐₐ supply
- Optional control box for switchgear and controlgear automatization

Design

**medium-voltage switchgear**  
**Metal enclosure**  
**Automation control box (optional)**

Configurations available in medium-voltage

cms.m-3f (up to 3 functional units): Three feeder functions or two feeder functions and a protection function (protected by fuses or circuit-breakers):

- cgmcosmos-3l, cgmcosmos-2lp, cgmcosmos-2lv
- cgm.3-3l, cgm.3-2lp, cgm.3-2lv
- ga-3k, ga-2k1ts, ga-2k1lsf (1400 mm in height, versions 1 and 2)

**medium-voltage switchgear** (more than 3 functional units):

- cgmcosmos-2l2p, cgmcosmos-5l, cgmcosmos-2l2v, cgmcosmos-3lv, cgmcosmos-2l2vp*, cgmcosmos-3lvp*
- cgm.3-2l2p, cgm.3-4l, cgm.3-2l2v
- ga-4k, ga-2k2ts, ga-2k2lsf (1400 mm in height, versions 1 and 2)

Where:

- l & k = Feeder function
- p & ts = Fuse protection function
- v & lsf = Circuit-breaker protection function
- * = VT HV fuse protected LV supply function

Note: For other configurations / values contact Ormazabal