MV/LV Transformer substations for distribution network solutions

**cms.m**

Prefabricated outdoor switchgear and controlgear substation

Up to 40.5 kV  
IEC Standards

Reliable innovation. Personal solutions.

www.ormazabal.com
Preface

Ormazabal’s cms.m is a prefabricated surface-mounted switchgear and controlgear substation, metal-enclosed, outdoor operation, compact and built in series, which is supplied from the factory as a unit.

The cms.m substation is designed for installation in electrical networks with rated voltage up to 40.5 kV in alternating current.

The cms.m family is made up of different models designed to house a wide range of medium voltage configurations.

Benefits

Safety

» High level of safety for people
» Protection against internal arcs: Class IAC-AB tested in accordance with IEC 62271-202 (optional)
» Accessibility of the medium voltage connectors through cover interlocked with the earthing switch
» Voltage presence indicator through ekor.vpis or ekor.ivds unit
» Medium voltage switchgear with earthing switch in all functions

Reliability

» Fully assembled at factory
» Product tested as a unit
» Corrosion category C5M-H (ISO 12944-1)
» Ventilation grilles with dust-capture filter R 15, class g2 (EN 779)
» Insulation chamber under self-ventilating cover

Efficiency

» Fast, straightforward replacement of the medium voltage switchgear on site
» Easy to transport and handle

Sustainability

» Reduced visual impact
» Reduced dimensions and weight

Continuous innovation

» Transportable in sea container HC 40’ (up to 8 units)
» Controlgear for switchgear automation (optional). Indoor and outdoor installation variants
» Built-in electronic control units for reliable integration with the telemanagement and remote control systems (optional)
» Auxiliary services supply unit up to 500 VA in cgmcosmos system (optional)

Technical data

Construction characteristics

» Fully gas-insulated medium voltage switchgear, for outdoor use:
  • cgmcosmos:
    ○ up to 24 kV IEC
    ○ up to 27 kV IEEE
  • cgm.3:
    ○ up to 38 kV IEEE
    ○ up to 40.5 kV IEC
» Metal enclosure with front access
» Medium voltage interconnections
» Earthing circuit connection

Technical characteristics

<table>
<thead>
<tr>
<th>System</th>
<th>cgmcosmos</th>
<th>cgm.3</th>
</tr>
</thead>
<tbody>
<tr>
<td>Rated voltage [kV]</td>
<td>24 27 38 40.5</td>
<td></td>
</tr>
<tr>
<td>Frequency [Hz]</td>
<td>50/60</td>
<td></td>
</tr>
<tr>
<td>Rated current [A]</td>
<td>400/630</td>
<td></td>
</tr>
<tr>
<td>Lightning impulse withstand voltage [kV]</td>
<td>125 150 185</td>
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<tr>
<td>Short-time current [kA/1 s]</td>
<td>16/20/25</td>
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</tbody>
</table>

* in cgmcosmos and cgm.3

For other rated voltages or values, check with Ormazabal.

Standards

IEC
IEC 62271-200
IEC 62271-202

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Design

cms.m-3f

cms.m-4f

Available configurations

cms.m comes in different lengths and heights, fitted with fully gas-insulated switchgear.

cgmcosmos system

<table>
<thead>
<tr>
<th></th>
<th>cms.m-3f</th>
<th>cms.m-4f</th>
<th>cms.m-220p</th>
<th>cms.m-230p</th>
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</thead>
<tbody>
<tr>
<td>l-l-l</td>
<td>o</td>
<td>o</td>
<td>o</td>
<td>o</td>
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<tr>
<td>l-v-l</td>
<td>o</td>
<td>o</td>
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<tr>
<td>l-p-l</td>
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<td>o</td>
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<td>l-p-p</td>
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<td>l-v-v</td>
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</tr>
</tbody>
</table>

Where:
- l = feeder function
- p = fuse protection function
- v = circuit-breaker protection function
- s = busbar switch function

Available
Unavailable

For other configurations, contact Ormaozabal.

External dimensions and weights

<table>
<thead>
<tr>
<th></th>
<th>cms.m-3f</th>
<th>cms.m-4f</th>
<th>cms.m-220p</th>
<th>cms.m-230p</th>
<th>cms.m-320p</th>
<th>cms.m-330p</th>
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</thead>
<tbody>
<tr>
<td>Length [mm]</td>
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<td>2296</td>
<td>2314</td>
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<tr>
<td>Width  [mm]</td>
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<tr>
<td>Height  [mm]</td>
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<td>Maximum weight [kg]</td>
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<td>1673</td>
<td>1491</td>
<td>2103</td>
<td>1528</td>
<td>1944</td>
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</tbody>
</table>

1 Medium voltage switchgear
2 Metal enclosure
3 Automation control box (optional)