Compact equipment assembly for transformer substations

Up to 36 kV, 630 kVA    EN 50532 standard
Preface
In 1998 Ormazabal introduced its range of compact prefabricated transformer substations, to be installed at ground level miniblok or underground minisub, both consisted of mb electrical compact equipment assembly. Since then the compact prefabricated transformer substations have continuously evolved with enhanced performances, being adapted to the needs of the MV distribution network.

Ormazabal’s mb is an associated type (A) compact equipment assembly, designed to be installed both in Prefabricated Transformer Substations and in buildings made for Transformer Substations, in public or private distribution networks up to 36 kV. Thanks to its manufacture, assembly, equipment and testing done entirely at the factory, mb offers uniform quality and significant reduction of costs and installation time, making it possible to have an operational Transformer Substation available in a short time.

mb compact equipment assemblies are used into several Distribution Network Solutions (DNS) for utilities (public distribution, smart grids...), end users (infrastructures, industry, tertiary) and renewable energies.

The main advantage of these assemblies is their high safety and protection for both persons and property against internal faults, their IAC classification, as well as their robustness and reliability.

Currenty over 8,500 mb have been installed worldwide.

General

Compact Equipment Assembly Type A (Associated) according to standard EN 50532: Assembly whose functional units, located contiguously, are modified to obtain non-conventional direct interconnections between them, or to reduce the size of the assembly. Its units can be independent or share part of the enclosure or frame.

The deviations from the standard design maintain its safety, functional and operational characteristics unaltered.

This catalogue shows the type A (associated) mb due to the fact that, while maintaining its functional properties, it represents the evolution of the type g (grouped) mb, as it has direct connections that offer a higher reliability than the conventional ones in the grouped one.

Safety
» High personnel safety against internal arcs, accidental direct contact, touch and step voltage
» Minimum quantity of dielectric liquid in the transformer’s low thermal load

Reliability
» Fully factory-assembled
» Product tested as a unit
» It can be integrated in Ormazabal’s compact transformer substations: miniblok and minisub

Efficiency
» Easy to transport due to its reduced dimensions and weight
» Fast replacement of the electrical equipment in transformer station

Sustainability
» Minimum visual, environmental and acoustic impact
» Reduced size and versatility
» Low risk of insulator spillage on the public roads, with no harm to the environment

Continuous innovation
» Auxiliary Low Voltage feeder inlet
» Ideal for use in public distribution networks up to 36 kV
» Smart-Grids ready equipment

Technical data mb

- Fully gas insulated Medium Voltage Switchgear: cmgcosmos-2lp upto 24 kV or cmg.3-2lp up to 36 kV. Electrical diagram (RMU) with 2 feeder functional units, input and output, and a protection functional unit with a switch-fuse combination.
- Ormazabal protection, control and metering units (remote control, telemetering, integrated control, telemanagement, etc.).
- Medium Voltage Distribution Transformer, 250, 400 or 630 kVA.
- LV Switchgear: Low Voltage Board with 4 outputs, with control and protection unit, as well as an auxiliary safety supply.
- Direct MV and LV interconnections.
- Self-supporting frame with lifting device and possibility of installing castorwheels.
- Earthing circuit connection.
- Lighting and auxiliary services.

Technical characteristics

<table>
<thead>
<tr>
<th>mb</th>
<th>mb.24</th>
<th>mb.36</th>
</tr>
</thead>
<tbody>
<tr>
<td>Rated voltage [kV]</td>
<td>24</td>
<td>36</td>
</tr>
<tr>
<td>Frequency [Hz]</td>
<td>50</td>
<td></td>
</tr>
<tr>
<td>Internal Arc (IAC class)(a)</td>
<td>16 kA / 0,5 s</td>
<td></td>
</tr>
<tr>
<td>Transformer Power [kVA]</td>
<td>250/400/630</td>
<td></td>
</tr>
<tr>
<td>MV Switchgear Rated current [A]</td>
<td>400/630</td>
<td></td>
</tr>
<tr>
<td>Outgoing Lines (L, U, 200 P)</td>
<td>400/630</td>
<td></td>
</tr>
<tr>
<td>Short-time current [kA]</td>
<td>16 / 20</td>
<td></td>
</tr>
<tr>
<td>Insulation level Industrial Frequency [kV]</td>
<td>50 / 60</td>
<td></td>
</tr>
<tr>
<td>Lightning impulse [kVpeak]</td>
<td>125 / 145</td>
<td></td>
</tr>
<tr>
<td>Lightning [kV]</td>
<td>70 / 80</td>
<td></td>
</tr>
<tr>
<td>Lightning [kV]</td>
<td>170 / 195</td>
<td></td>
</tr>
<tr>
<td>Low Voltage Board Rated voltage [V]</td>
<td>440</td>
<td></td>
</tr>
<tr>
<td>Rated current [A]</td>
<td>1000</td>
<td></td>
</tr>
<tr>
<td>Rated current [A]</td>
<td>400</td>
<td></td>
</tr>
<tr>
<td>No. outputs</td>
<td>4</td>
<td></td>
</tr>
</tbody>
</table>

![Image](https://example.com/image1)

![Image](https://example.com/image2)

![Image](https://example.com/image3)

![Image](https://example.com/image4)

![Image](https://example.com/image5)

Standards

- IEN 50532 Compact Equipment Assembly (CEADS)
- IEC / UNE-EN 62271-1
- Common specifications for high voltages switchgear and control gear standards.

On request:
Specific regulations of the Utility

External dimensions and weights

<table>
<thead>
<tr>
<th>mb</th>
<th>mb.24</th>
<th>mb.36</th>
</tr>
</thead>
<tbody>
<tr>
<td>Power [kVA]</td>
<td>250</td>
<td>250</td>
</tr>
<tr>
<td>Width [mm]</td>
<td>1890</td>
<td>1890</td>
</tr>
<tr>
<td>Depth [mm]</td>
<td>1673</td>
<td>1824</td>
</tr>
<tr>
<td>Height(a) [mm]</td>
<td>1532</td>
<td>1529</td>
</tr>
<tr>
<td>Weight [kg]</td>
<td>1800</td>
<td>2100</td>
</tr>
</tbody>
</table>

- P With castor wheels
For other configurations, please consult Ormazabal

Family

mb mb.24
- MV switchgear up to 36 kV
- Transformer up to 630 kVA
- LV board
- Protection, control and metering units
- Self-supporting frame

mb mb.36
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