MDY Busduct System
A reliable and safe solution for power transmission from the transformer to switchgear and between switchgear sections
The MDY busduct system is the ABB solution for power transmission from the transformer to low voltage switchgear and between switchgear sections.

From the point of view of the transmission reliability, busduct is the safest solution for conducting current from distribution transformer to main switchgear and motor control board. The MDY busduct is manufactured from insulated conducting bars, which can be made of aluminium or copper. Thanks to its construction, the busduct is rigid and its short circuit withstand is in a class of its own from the transformer terminals up to the main switching device terminals of the switchgear. Even with its open construction, the insulated busduct can be used in demanding environments. In addition to full phase separation, the MDY busduct can also be protected from rain and mechanical damage using an additional enclosure.

The MDY busduct is manufactured in transport units which enable quick and easy installation and connecting even in narrow places. It can be connected to existing switchgear, and also joined to different manufacturers busducts. Each MDY busduct system is designed individually on order to ensure an optimal solution for our customers.
The self-supporting frame construction of the MDY busduct is achieved using corrosion resistant aluminium profiles. The insulators with their carriers, fastened to the aluminium profiles, form a rigid but light construction. The short-circuit withstand level of the MDY busduct is sufficient for most applications.

MDY busduct is
- Rigid to withstand short circuits
- No electric arcs
- Good cost-effectiveness
- Quick and easy installation
- Safe and reliable operation

1 Horizontal angles are formed by bending.
2 Halogen-free plastic insulation.
3 The degree of protection by enclosure of the busbar covers is IP30 and when fully sealed IP54. If required, IP65 is also available. The installation adjustment range is ± 40 mm. Busbar extension joints are enclosed, otherwise the construction is open.
4 Vertical angles have the same enclosure class as busbar joints. Installation adjustment range is ± 20 mm.
5 The busduct can be connected to the switchgear from top or the bottom. Connection to ABB’s MNS type switchgear is carried out using standard bushings providing the same enclosure class as the busduct. This guarantees the shortcircuit withstand of the busduct system up to the main switching device terminals.
**Busbar material**
The MDY busbar material is aluminium or copper, but can also be tin-coated copper. A halogen-free insulating plastic coating is extruded onto the bars. The insulation fastens tightly onto the busbar surface, which guarantees an excellent current-carrying capacity of the busduct. The insulation material allows the busbars to be bent.

**Flexible MDY busduct connections**
The MDY busduct is connected to a transformer using flexible connections which negate the effects of thermal expansion and vibrations. Long busducts (>20 m) are provided with longitudinal expanding connections to attenuate the thermal expansion. The connections are pre-installed on the busduct at the factory.

**Busbar bushings and mechanical protection**
(wall, roof and floor bushings)
The fire insulation between compartments is realised using bushings, which fulfill fire separation class EI-M 60 or EI-M 120 according to the fire-safety regulations for production and storage buildings.

**Other equipment**
- Busbar sectionalizer switch
- Current transformers
- Protections:
  - mechanical protection
  - protection against rain
  - protection against insects
MDY Technical Data
- Rated voltage $U_e$ 400 ... 690 V
  (tested 1000 V AC / 1500 V DC, 3/N/PE)
- Rated current $I_e$ 1200 ... 5500 A
- Short-circuit withstand current:
  - short-time withstand current $I_{cw}$ max. 100 kA, 1s
  - peak withstand current $I_{pk}$ max. 235 kA
- Enclosure class IP 30, IP 54, (IP 65)

Current values
Ambient temperature +35 °C, IP 30

<table>
<thead>
<tr>
<th>Current</th>
<th>Width, mm</th>
<th>Weight, kg</th>
</tr>
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<tbody>
<tr>
<td>Al</td>
<td>Cu</td>
<td></td>
</tr>
<tr>
<td>1300</td>
<td>1900</td>
<td>400</td>
</tr>
<tr>
<td>2500</td>
<td>3200</td>
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</tr>
<tr>
<td>6000</td>
<td>1000</td>
<td>1000</td>
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</tbody>
</table>

A busbar width of 400 mm is also possible up to a rating of 2150 A using aluminium bars and up to 2700 A using copper bars. The number of phase bars is determined by the rated current and service conditions.

Bushing sizes

<table>
<thead>
<tr>
<th>Frame size</th>
<th>Width, mm</th>
<th>Height, mm</th>
<th>Distance of bushing center point of opening, mm</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>from the switchgear roof</td>
<td>from the center of switchgear front edge</td>
<td>from the center of switchgear front edge</td>
</tr>
<tr>
<td>400</td>
<td>500</td>
<td>260</td>
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