

# Product Datasheet

## Busbars: 36 kV, 3150 A, 3-ph enclosed



### Executive Summary

The Hivoduct Busbars provide safe medium-voltage and high-current transmission with maximum flexibility.

With non-flammable, maintenance-free pressurized air insulation, modular transport units, and a service life of more than 40 years, they combine outstanding technical performance with sustainability.

#### Key benefits at a glance:

- ✓ Suitable for medium-voltage and high-current applications (36kV / 3150 A)
- ✓ Maintenance-free, non-flammable, and safe in operation
- ✓ Environmentally friendly: lowest losses, recyclable aluminum, reduced CO<sub>2</sub> footprint
- ✓ Flexibility for all layouts: zero bending radius, modular transport units
- ✓ Fast installation and disassembly without proprietary tools
- ✓ All interface options (GIS, transformer, cable terminations, air bushings)
- ✓ Lowest outside magnetic field due to enclosure grounding
- ✓ Expected service life > 40 years

### Technical Description

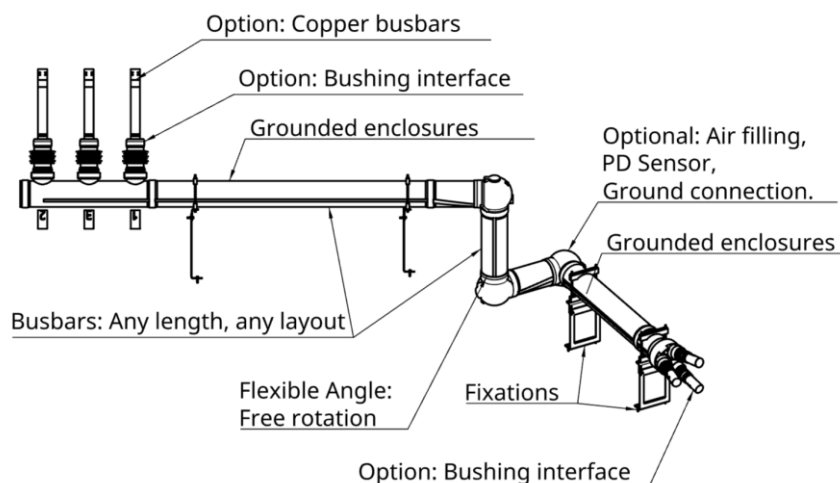
The Hivoduct Busbars form a single-phase enclosed system for reliable medium-voltage and high-current transmission. They can be engineered for nearly any layout requiring a medium-voltage connection inside a building, on a substation or over long distances.

The busbars can connect to all types of interfaces as specified by the application.

#### Typical interfaces:

- **Air bushings** - to connect to air-insulated busbars or overhead lines
- **Transformer direct connection** - direct link to transformer bushings
- **GIS direct connection** - adapter to connect directly to a GIS with bolted flange
- **Fixations** - for mechanical fixation of the busducts to wall or sealing
- **Sliding system** - installation in protective conduit
- **Monitoring system** - monitoring of pressure, temperature and density

Layout, interfaces, and gas compartments are engineered according to customer specifications during the project phase.



## Technical Parameters

Hivoduct busbars are engineered for flexible and demanding medium-voltage installations. The following parameters summarize the key electrical, mechanical, and operational characteristics of the system.

| Category                            | Parameter                           | Value                                                    | Information                                                |
|-------------------------------------|-------------------------------------|----------------------------------------------------------|------------------------------------------------------------|
| <b>Capacity</b>                     | Transmission capacity               | 190 MW                                                   | For a 3-phase system made of one 3-phase enclosed busducts |
|                                     | <b>Electrical Ratings</b>           | Rated voltage                                            | 36 kV<br>IEC 62271-1                                       |
|                                     | Rated current                       | 3150 A                                                   | IEC 62271-1                                                |
|                                     | Short circuit current               | 63 kA, 1 s                                               | IEC 62271-1                                                |
|                                     | AC test voltage                     | 70 kV                                                    | Partial discharge < 5 pC @ 40 kV                           |
|                                     | BIL test voltage                    | ±170 kV                                                  | IEC 62271-1                                                |
|                                     | Capacitance                         | ~100 pF/m                                                | Each phase                                                 |
|                                     | AC resistance                       | 11 μΩ/m                                                  | -                                                          |
| <b>Insulation &amp; Conductor</b>   | Insulation media                    | Pressurized air (N <sub>2</sub> 80%, O <sub>2</sub> 20%) | Dry. Filled from bottle.                                   |
|                                     | Filling pressure                    | 10 bar                                                   | Min 9.6, Max 11.4                                          |
|                                     | Conductor material                  | Aluminum                                                 | High conductivity > 28 m/Ω·mm <sup>2</sup>                 |
|                                     | Conductor size                      | 4200 mm <sup>2</sup>                                     | Cross section                                              |
|                                     | Contact system                      | Spiral contacts                                          | Silver plated                                              |
| <b>Enclosure</b>                    | Material                            | Aluminum                                                 | Non-flammable, Anticorodal                                 |
|                                     | Outer diameter                      | 280 mm                                                   | -                                                          |
|                                     | Cross section                       | 7300 mm <sup>2</sup>                                     | Ground connection included                                 |
|                                     | Max enclosure temperature           | < 35 K                                                   | @ 2000 A for > 8 h natural cooling                         |
| <b>Mechanical Data</b>              | Transport length                    | < 6 m                                                    | For easy transport and handling                            |
|                                     | Transport weight                    | Flexible                                                 | Depending on unit size                                     |
|                                     | System weight                       | 54 kg/m                                                  | Conductor + enclosure                                      |
|                                     | Creepage/flashover                  | Project-specific                                         | Bushing interface specification                            |
| <b>Assembly &amp; Shipping</b>      | Shipping assembly                   | Modular transport units                                  | Flange connection on-site                                  |
|                                     | Shipping pressure                   | <0.2 bar                                                 | Slight overpressure, topping up on-site                    |
|                                     | Packing                             | Tubes stacked                                            | Standard pallets, < 1500 kg                                |
|                                     | Air filling connection              | Festo KD 1/4                                             | Pluggable socket                                           |
| <b>Monitoring &amp; Safety</b>      | Pressure and temperature monitoring | online                                                   | Optional, GSM & cloud storage                              |
|                                     | Manometer                           | Switch contacts                                          | Floating                                                   |
|                                     | Density meter                       | Switch contacts                                          | Floating                                                   |
|                                     | Particle traps                      | Project-specific                                         | Collection of loose particles                              |
| <b>Service &amp; Sustainability</b> | Reusable materials                  | Aluminum                                                 | -                                                          |
|                                     | Life expectancy                     | > 40 years                                               | -                                                          |

Other ratings and features on request.



More Information online