

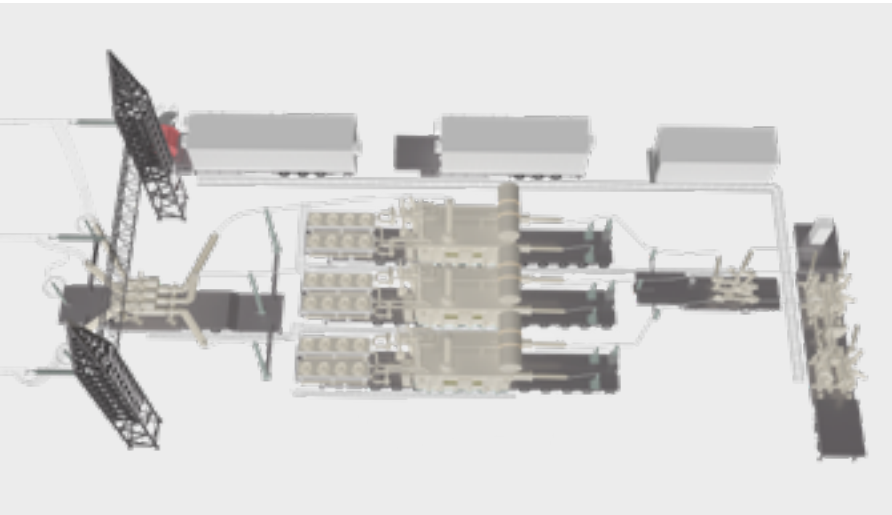
GRID SOLUTIONS

Mobile Modular Substations

For fast and flexible deployment



Grid-eXpand™
Mobile



Our Mobile Modular Substations are complete plug-and-play substations, comprising trailer- or skid-mounted modules for fast and easy transportation and energization. They are a vital rapid-response solution for major grid disruptions and other needs.

This robust, mobile grid connection is pre-assembled and factory-tested to reduce installation and start-up times from several months to only a few days, compared to a traditional substation. This significantly reduces the time needed to restore power after severe outages or emergencies.

Ready to use, the solution comprises trailer- or skid-mounted modules, which are connected to each other to form a complete substation. The modules, skids and trailers are dimensioned to meet road regulations for easy transportation fully assembled.

Once on-site, this versatile mobile solution requires little or no civil works, is fast and easy to erect and remove, and has minimal environmental impact. It can tolerate all weather conditions and harsh environments.

Thanks to its modularity the same substation can be used in different configurations, using all or only some of the modules according to needs or site conditions.

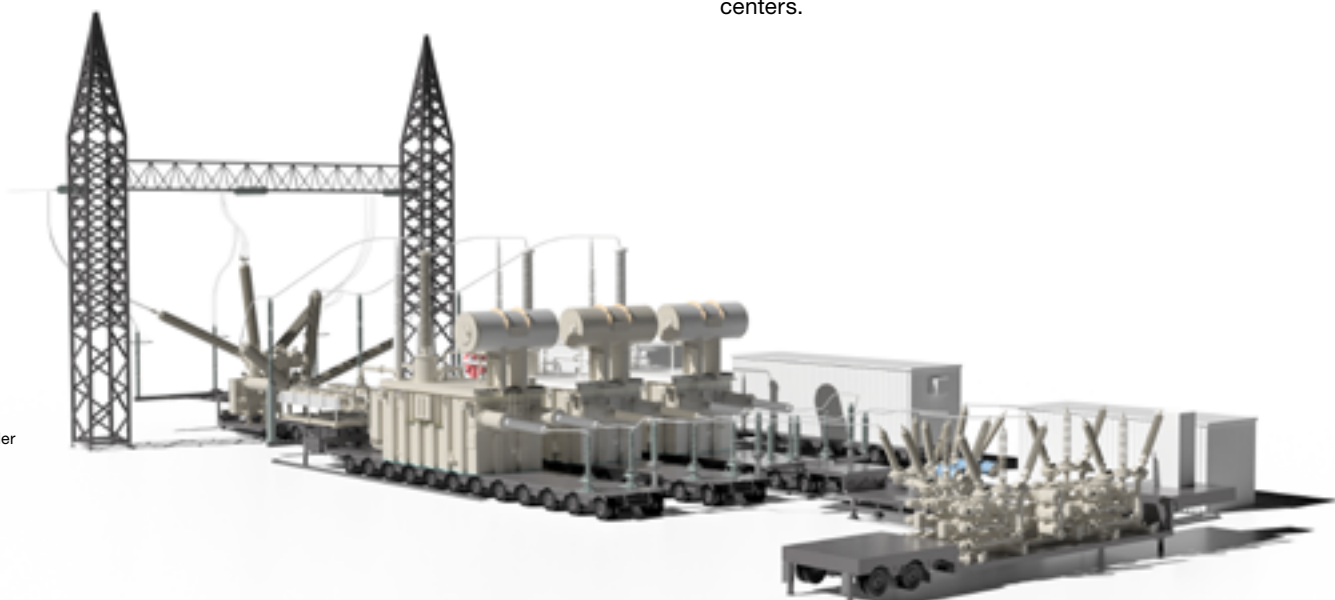
This provides customers with exceptional flexibility. The substations cover all voltage levels (up to 420 kV) and power ratings (up to 500 MVA),

Mobile Modular Substation is the perfect solution to rapidly restore power or provide backup supply during a major outage, emergency or grid expansion. It is mainly intended for temporary installation but can also be used as a permanent substation.

Designs comply with national grid codes and the standards of the International Electrotechnical Commission (IEC).

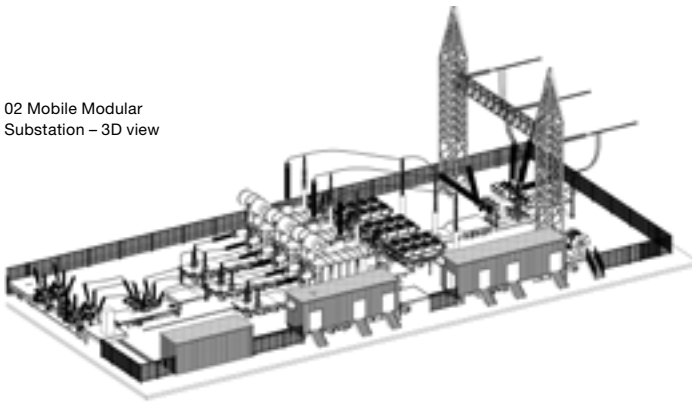
Benefits and added value

- A complete, configurable substation of trailer- or skid-mounted modules
- Ready to use – pre-assembled and pretested for fast energization on-site
- Easy to install and remove with minimal environmental impact
- Resilient to harsh weather and climate conditions
- Digital-twin enabled
- Expert support from our global network of 35 service centers.

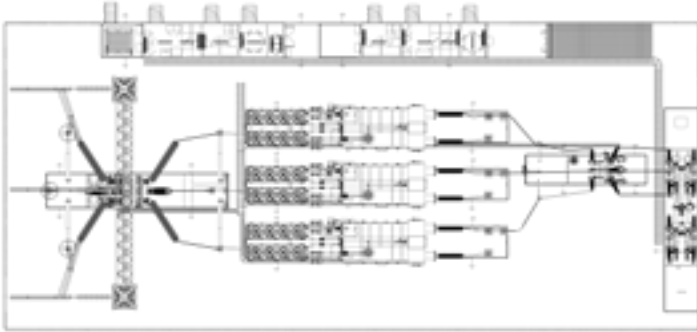


01 Mobile Modular Substation – 3D render

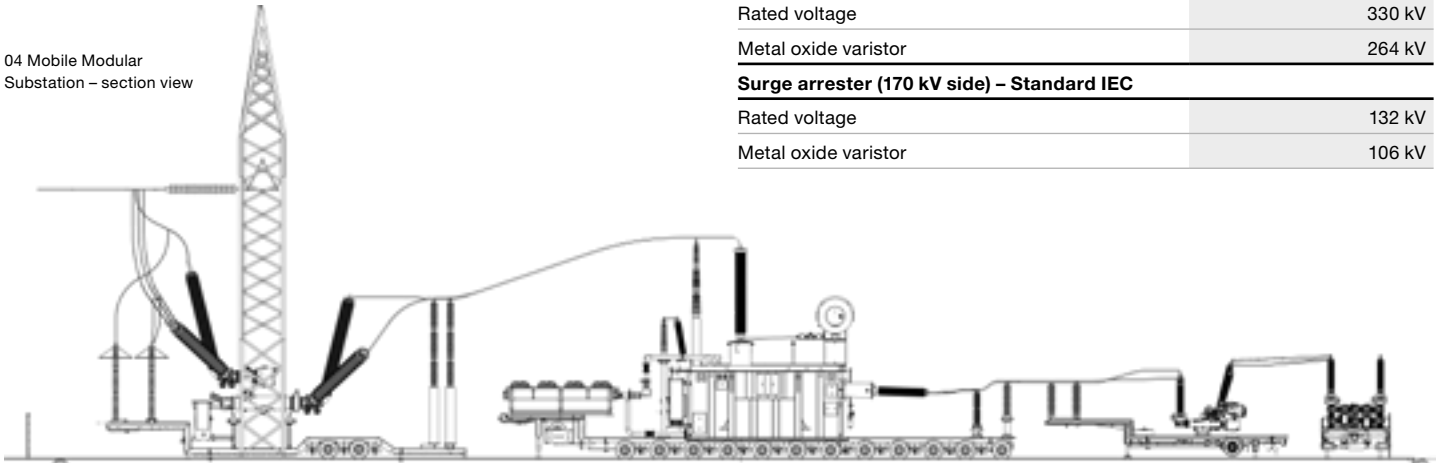
02 Mobile Modular Substation – 3D view



03 Mobile Modular Substation – top view



04 Mobile Modular Substation – section view



Main technical data

PASS M0S – Standard IEC

| | |
|------------------------------------|--------|
| Highest system voltage | 420 kV |
| Rated system voltage | 380 kV |
| Rated frequency | 50 Hz |
| Rated peak withstand current | 164 kA |
| Rated short time withstand current | 63 kA |
| Rated current | 4000 A |

PASS M0H – Standard IEC

| | |
|------------------------------------|--------|
| Highest system voltage | 170 kV |
| Rated system voltage | 150 kV |
| Rated frequency | 50 Hz |
| Rated peak withstand current | 104 kA |
| Rated short time withstand current | 40 kA |
| Rated current | 3150 A |

Power transformer – Standard IEC

| | |
|----------------|---------------------------------------|
| Rated power | 500000 kVA |
| Cooling method | ONAN/ODAF |
| Vector group | YNynd |
| Phase | 3 x (1-Phase) |
| Description | 420/170/20 kV 167 MVA @ 400/150 kV |

Surge arrester (420 kV side) – Standard IEC

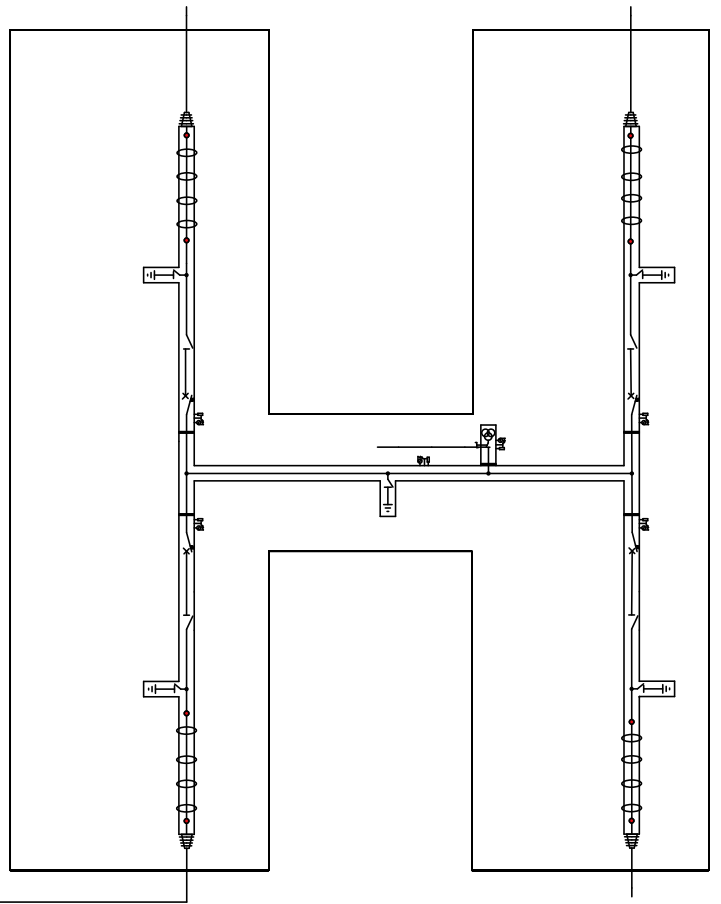
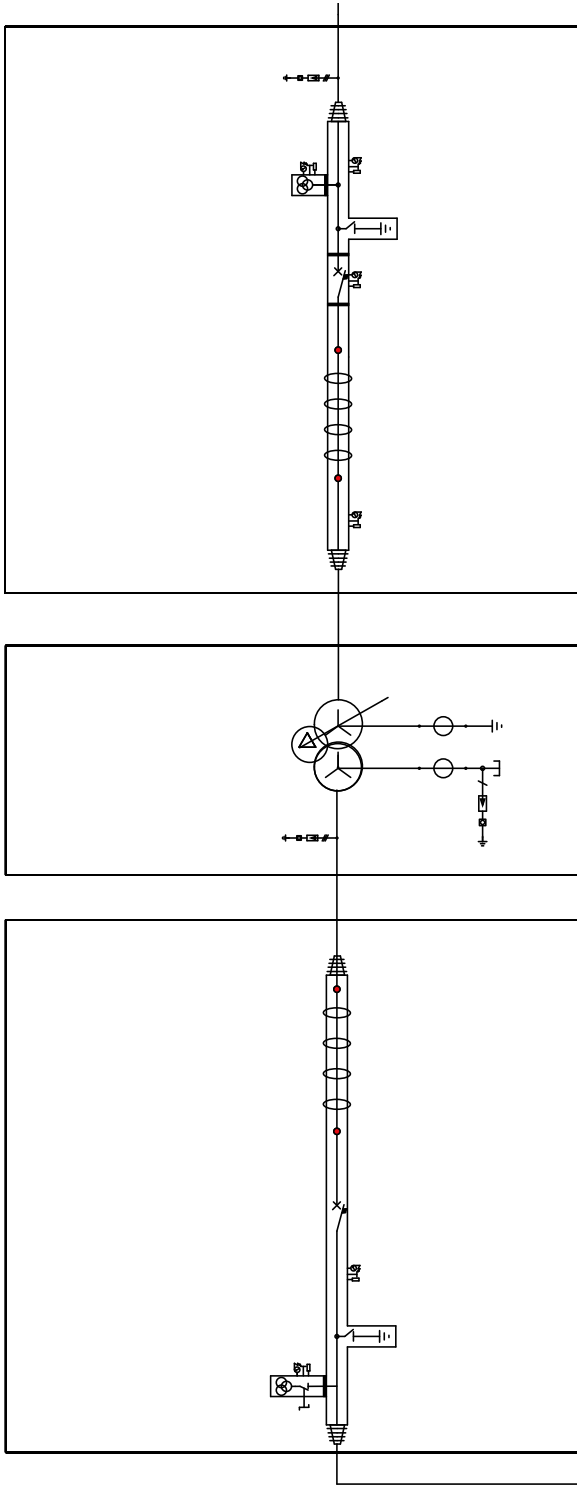
| | |
|----------------------|--------|
| Rated voltage | 330 kV |
| Metal oxide varistor | 264 kV |

Surge arrester (170 kV side) – Standard IEC

| | |
|----------------------|--------|
| Rated voltage | 132 kV |
| Metal oxide varistor | 106 kV |

Mobile Substations are available for the following rated voltage and power levels

| High voltage (primary) section | | | | | | |
|---|-------------|------|------|------|------|-------|
| Rated voltage | [kV] | 72.5 | 145 | 170 | 245 | 420 |
| Rated frequency | [Hz] | | | | | 50–60 |
| Power frequency withstand voltage | up to [kV] | 140 | 175 | 325 | 460 | 650 |
| Basic insulation level | up to [kV] | 325 | 650 | 750 | 1050 | 1425 |
| Rated current | up to [A] | 2000 | 2500 | 2500 | 4000 | 5000 |
| Rated making and breaking capacity | up to [kA] | 40 | 40 | 40 | 50 | 63 |
| Power transformer | | | | | | |
| Rated power | up to [MVA] | | | | | 500 |
| Medium voltage (secondary) section | | | | | | |
| Rated voltage | [kV] | 42 | 36 | 24 | 17.5 | 12 |
| Rated frequency | [Hz] | | | | | 50–60 |
| Power frequency withstand voltage | up to [kV] | 85 | 70 | 50 | 38 | 28 |
| Basic insulation level | up to [kV] | 200 | 170 | 125 | 75 | 75 |
| Rated current | up to [A] | | | | | 2500 |
| Rated making and breaking capacity | up to [kA] | | | | | 40 |



05 Single line diagram