

# Load centre substations – indoor installation

## Application:

FEAG builds load centre substations (S-stations) specially for the automotive sector. This station type is used for supplying low voltage networks or individual large consumers and is modular in construction.

The S-stations can be installed directly in the production areas without additional safety measures and are suitable for installation in aggressive atmospheres or fire-risk rooms and in environmental conditions as per VDE 670 or 0660 Part 500.



S-Station

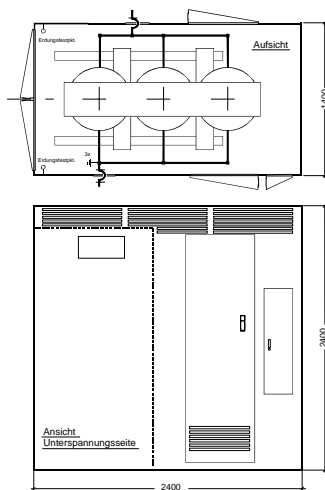
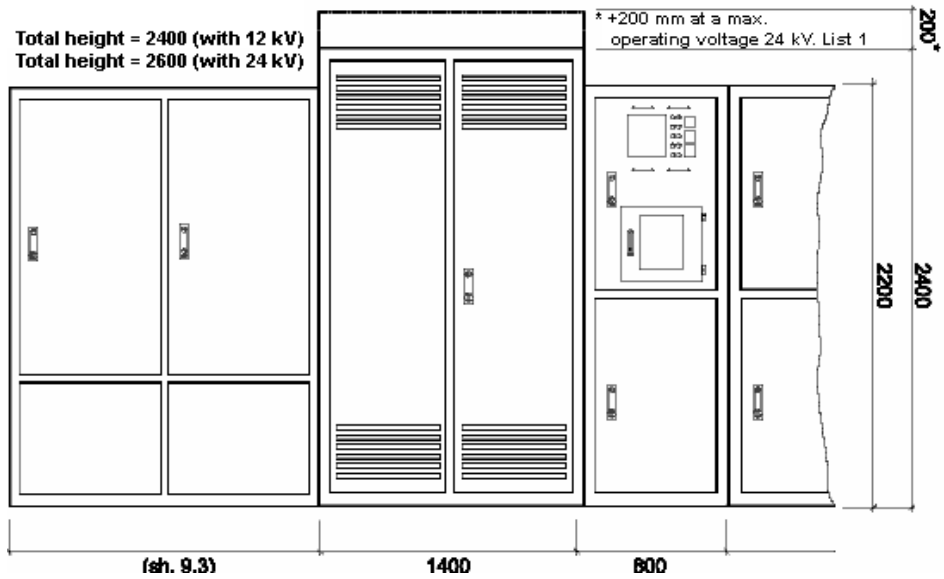
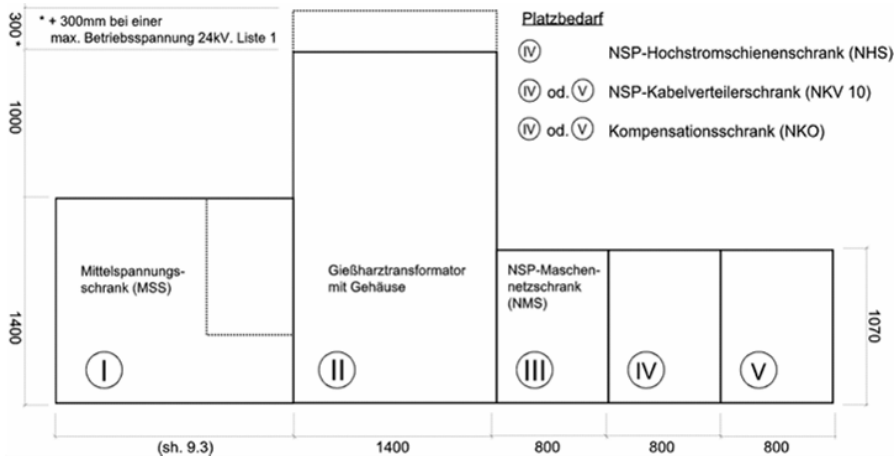
The S-station includes (from left to right) the following components:

- Medium-voltage cabinet, consisting of ring cable and supply connection panels for 12kV and 24kV
- Resin-encapsulated transformer with enclosure
- Low voltage cabinets, consisting of the:
  - o network cabinet,
  - o cable distribution cabinet,
  - o high-current busbar cabinet and
  - o compensation cabinet.

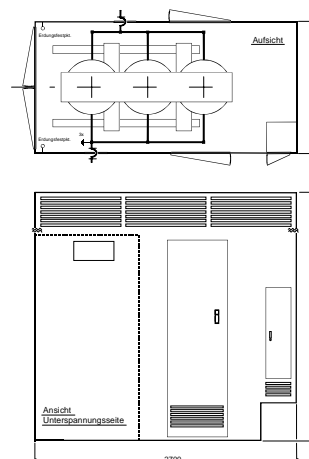
Each network cabinet is supplied by its own control voltage supply.

The high-current busbar connection cabinets with their connection to the compensation cabinet are directly flanged to the network cabinet or to a cable distribution cabinet.

# Station layout diagram:



Transformer enclosure (12 kV)



Transformer enclosure (24 kV)

## Technical data:

### *Test values for the primary distribution panel:*

$I_k'' = 16 \text{ kA}$  (500 MVA, 20 kV),  $t_k = 1 \text{ s}$

$I_k'' = 25 \text{ kA}$  (250 MVA, 6.3 kV or 750 MVA, 20 kV),  $t_k = 1 \text{ s}$

$I_k'' = 31.5 \text{ kA}$  (350 MVA, 6.3 kV),  $t_k = 1 \text{ s}$

### *Test values for the transformer panel:*

#### *High-voltage side*

$I_k'' = 16 \text{ kA}$  (500 MVA, 20 kV),  $t_k = 1 \text{ s}$

$I_k'' = 25 \text{ kA}$  (250 MVA, 6.3 kV or 750 MVA, 20 kV),  $t_k = 1 \text{ s}$

$I_k'' = 31.5 \text{ kA}$  (350 MVA, 6.3 kV),  $t_k = 1 \text{ s}$

#### *Low-voltage side:*

$I_k'' = 110 \text{ kA}$ ,  $t_k = 300 \text{ ms}$

### *Test values for the low voltage panels:*

Short-circuit strength with uninfluenced short-circuit current

$I_k'' = 80 \text{ kA}$  or  $I_k'' = 110 \text{ kA}$

taking into account the values in Table V, VDE 0660, Part 500, Section 7.5.3,

$t_k = 1 \text{ s}$

*Height of S-station:* 2.40m with 12 kV; 2.60m with 24 kV

### *Protection class:*

Transformer enclosure IP23,

Compensation cabinet IP33,

Other system components: IP43 as per VDE 470 / Part 1 (IEC 529)

### *Colour / corrosion protection:*

Corrosion protection primer coat with top coat, colour RAL 7032

### *Produced in compliance with the following regulations:*

- BV Equipment regulations issued by VW-AG
- BVL Special contract conditions for deliveries
- ZVM Supplementary contract conditions for fitting work
- 8-E-21 Labelling guideline
- BGV Accident prevention regulations
- DIN, VDE and EN electrical engineering regulations

Applicable national regulations for foreign works