

Lahmeyer Compactstation®



Planning folder

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Product overview

The diversity of **Lahmeyer Compactstations®** contains the series LCS-E.7, NDV400, NDV1200-2600, WPS2500 and special types.

With **Lahmeyer Compactstations®** nearly every thinkable application for your demands is possible.

Our smallest substation:

LCS-E.7



The allrounder:

NDV400

NDV400 with concrete base



The specialist for high
power solutions:

NDV1200 to NDV2600



Product overview

The diversity of **Lahmeyer Compactstations®** contains the series LCS-E.7, NDV400, NDV1200-2600, WPS2500 and special types.

With **Lahmeyer Compactstations®** nearly every thinkable application for your demands is possible.

The substation for 36kV:

WPS 2500



Our rental substations:

e.g. LCS-E.7



Our rental substations:

e.g. NDV 400



Standard products - selection criteria

Type of substation	operation	max. power	max. dimensions substation					max. dimensions transformer ^③					Measuring		Meter boxes	compensation	More rooms
			L	x	W	x	H	L	x	W	x	H	LV	MV			
			mm	x	mm	x	mm	mm	x	mm	x	mm					
LCS-E.7	Front side	630kV	2540	x	1180	x	2086	1250	x	900	x	1650	Y				
NDV 400	Long side	800kVA ^①	3010	x	1710	x	2411	1650 ^②	x	900	x	1900	Y	Y	Y	Y	possible
NDV 1200	Front side	1250kVA	3000	x	2100	x	2340	1750	x	1400	x	1900	Y	Y	Y	Y	possible
NDV 1600	Front side	1600kVA	3000	x	2300	x	2340	1950	x	1400	x	1900	Y	Y	Y	Y	possible
NDV 1800	Front side	1600kVA (2x 1000kVA)	3284	x	2300	x	2340	1950	x	1750	x	1900	Y	Y	Y	Y	possible
NDV 2500	Front side	2500kVA	3000	x	2300	x	2640	1950	x	1400	x	2200	Y	Y	Y	Y	possible
NDV 2600	Front side	2500kVA (2x 1000kVA)	3284	x	2300	x	2640	1950	x	1750	x	2200	Y	Y	Y	Y	possible
WPS 2500	Front / long side	4000kVA	4500	x	2500	x	3080	2500	x	2150	x	2200 / 2650 ^④	Y	Y	Y	Y	possible

- ① Use of 800kVA-transformer only after consultation with SBG Neumark
- ② max. length L = 1350mm when use of Siemens 8DJH 4-F or Schneider 4-F
- ③ valid for hermetic oil transformer w/o wheels; CR-transformers incl. protection range
- ④ 1. dimension: top of tank, 2. dimension: highest point (accessories)

Please note, according to EN 62271-202, that in case of installation inside a substation the transformer must not be steady operated with nominal power. The transformer has to be operated with reduced power depending on ambient conditions and the housing class of the substation.

Equally, the LV-switchgears are subject to a reduction of the nominal current depending on ambient conditions.

Technical rules

Lahmeyer Compactstations® apply to following technical rules:

DIN VDE 1000	General guiding principles responsible to security of technical products
DIN VDE 0101	Heavy current gears with rated voltages over 1 kV
DIN VDE 0105-100	Operation of heavy current plants
DIN EN 60071-1 (VDE 0111 part 1)	Insulation co-ordination Part 1: Definitions, principles and rules
DIN EN 60071-2 (VDE 0111 part 2)	Insulation co-ordination Part 2: Application guide
DIN EN 60445 (VDE 0197)	Basic and safety principles for man-machine interface, marking and identification - Identification of equipment terminals and conductor terminations
DIN EN 60947-1 (VDE 0660-100)	Low-voltage switchgear and controlgear Part 1: General rules
CENELEC HD 603 S1/A3	Heavy current cables; part 603: Distribution cables of rated voltage U ₀ /U 0,6/1 kV
CENELEC HD 620 S1/A3	Heavy current cables; part 620: Distribution cables with extruded insulation for rated voltages from 3,6/6 (7,2) kV to 20,8/36 (42) kV
DIN EN 61442 (VDE 0278 part 442)	Test methods for accessories for power cables with rated voltages from 6 kV (U _m = 7,2 kV) up to 36 kV (U _m = 42 kV)
DIN EN 60529 (VDE 0470 part 1)	Degrees of protection provided by enclosures (IP code)
DIN EN 60076-10 (VDE 0532 part 76-10)	Power-transformers Part 10: determination of sound levels
DIN VDE 0660 part 514	Low voltage-switch device combinations; protection against electric shock; protection against direct accidental touch of dangerous active parts
DIN EN 62271 part 1 (VDE 0671-1)	High-voltage switchgear and controlgear Part 1: Common specifications

Technical rules

DIN EN 62271 part 202	High-voltage switchgear and controlgear - Part 202: High voltage/low voltage prefabricated substation
DIN EN 61230 (VDE 0683 part 100)	Live working - Portable equipment for earthing or earthing and short-circuiting
DIN EN ISO 12944	Paints and varnishes - Corrosion protection of steel structures by protective paint systems
DIN 4102	Fire behaviour of building materials and building parts
DIN EN 14598 part 1	Reinforced thermosetting moulding compounds - Specification for Sheet Moulding Compound (SMC) and Bulk Moulding Compound (BMC)
VDE 0100	Standards for low voltage installations
DGUV Order 3	Accident prevention regulation: electric installations and means of production

The regulations of the water regime law (WHG = „Wasserhaushaltsgesetz“) of the Federal Republic of Germany and the regulation concerning electromagnetic fields, 26. BImSchG (federal immission law) are fulfilled.

Installation, initial start-up and operation of the substation have to be done by qualified personnel, trained in use of MV-switchgears, transformers, LV-panels, and in accordance with the appropriate regulations and standards.



Following safety rules acc. to DIN VDE 0105 shall be observed:

- 1) Disconnect mains!**
- 2) Prevent reconnection!**
- 3) Test for absence of harmful voltages!**
- 4) Ground and short circuit!**
- 5) Cover or close off nearby live parts!**

Anticorrosive Coating

All **Lahmeyer Compactstations®** apply steel sheet as housing material and the time-proven DUPLEX-coating-system.

DUPLEX-system = Galvanising + Powder coating

Corrosion protection with DUPLEX-system has been established in many sectors of our industrial society, architecture, automotive and energy supply.

Advantages of the DUPLEX-system:

- Long duration of protection
- Industrial work process and technology, by that safe procedures and defined quality
- Many possibilities to design

Steel, zinc and powder coating act as an ideal combination!

Due to this synergy effect, the duration of protection is ca. **1.8 to 2.5 times longer** than the single durations of galvanising and powder coating. This is because the zinc layer is protected from atmospheric and chemical influences.

- Zinc layer remains in mint condition
- Damages on the coating have no impact on the zinc
- No rust penetration

For our housing parts, we use continuous galvanised steel sheet. Applied steel type is DX52D+Z275 according to DIN10142.

The zinc layer amounts ca. 275g/m², which equates ca. 20µm thickness.

The substation is at least single layer powder coated (>70µm) 100% non-porous.

Advantages of powder coating:

- Superior to wet coating
- Environment-friendly
- Industrial work process
- Good adhesion on zinc
- High bending strength, highly impact- and scratch-resistant
- Non-porous
- Flexible Design



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Lahmeyer Compactstation® **LCS-E.7**

is suitable for transformers with:

Power	up to	630 kVA
Voltage	up to	24 kV

Use:

Frontside operated
Grid- or Customer-substation, LV-measurement possible

Dimensions:

Footprint	2,65 m ²
Area with opened doors	5,05 m ²
L x W x H	2540 x 1180 x 2086 mm

Weights:

Empty housing	ca. 720 kg
Total	ca. 3200 kg

(approx. with DIN-transformer 630kVA and equipment)

Design:

Housing:

Housing class = 15K
Steel sheet, galvanised and powder coated,
Transformer-compartment accessible by push-in plug,
lockable doors for MV- and LV-compartment
Standard colour: Olive grey (RAL 6003)
other RAL-colours possible (additional charge),
Graffiti-protection possible

Base:

With oil collecting pan
steel sheet, galvanised and powder coated
with Lahmeyer-cable inlets

Equipment:

MV-compartment:

SBG	HV-fuse-comp. (air-insulated)	12/24 kV
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SF6-insulated MV-switchgears with max.:

Siemens	8DJH	12/24 kV	3F
Driescher	Minex C	12/24 kV	4F

Transformer:

Hermetic distribution transformer
up to 630 kVA

max. dimensions transformer:
L x W x H = 1250 x 900 x 1650 mm

LV-distribution:

or LV-strip type fuse disconnecter	910 A
or LV-fuse switch, size 3/4a	up to 1250 A
or MCCB	up to 1000 A

max. 8 outgoing
LV-strip type fuseways or
LV-strip type fuse disconnecter size 1/2/3

Option LV-measuring:

(910A-strip type disconnecter as main switch)

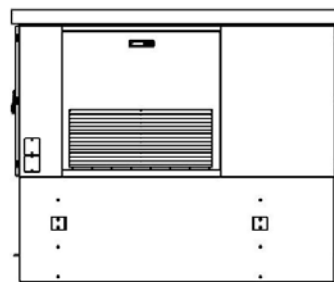
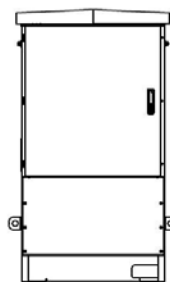
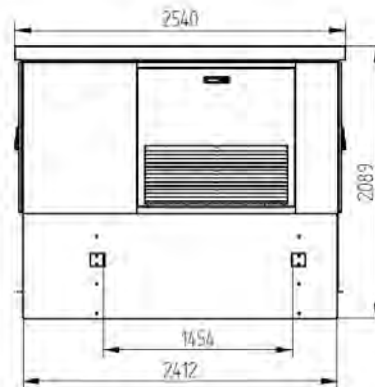
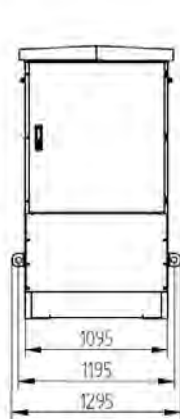
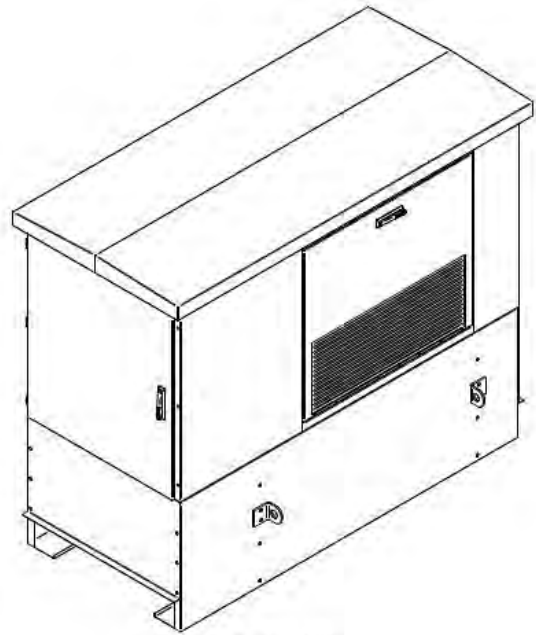
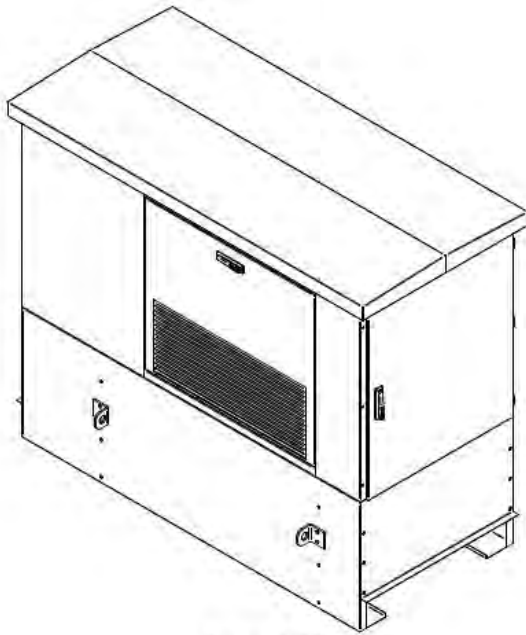
4 outgoing	and	meter box size 1
3 outgoing	and	meter box size 2

General equipment options:

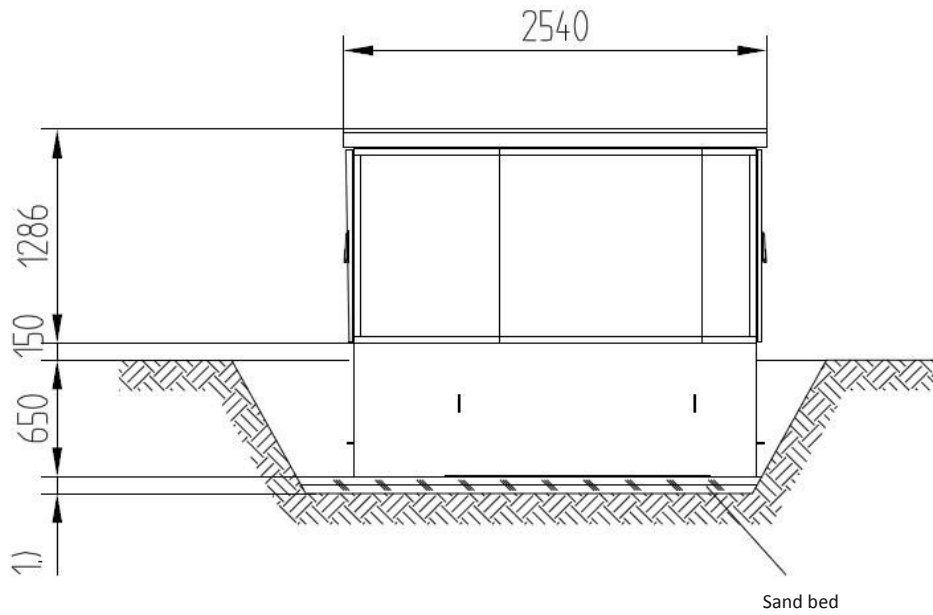
synchronisation
current metering
voltage metering
multimeters
sockets
lighting
fuses

LCS-E.7

Dimension sheet
LCS-E.7

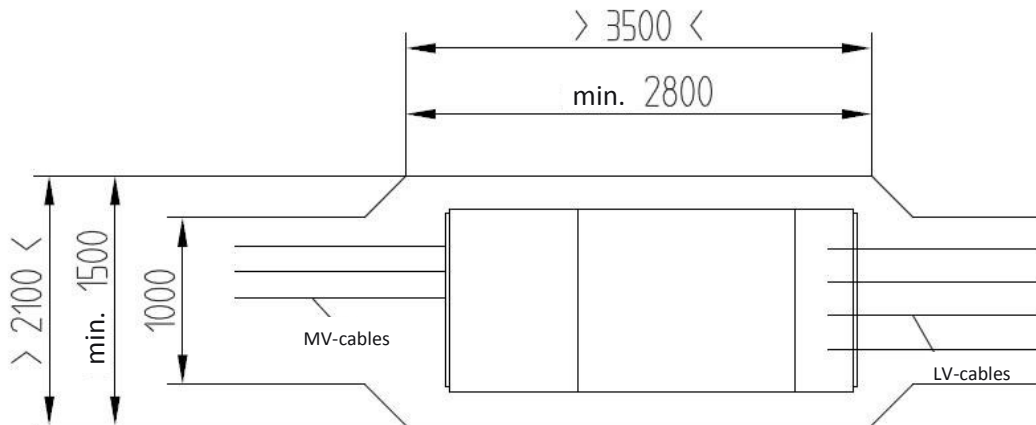


**Excavation plan
 LCS-E.7**

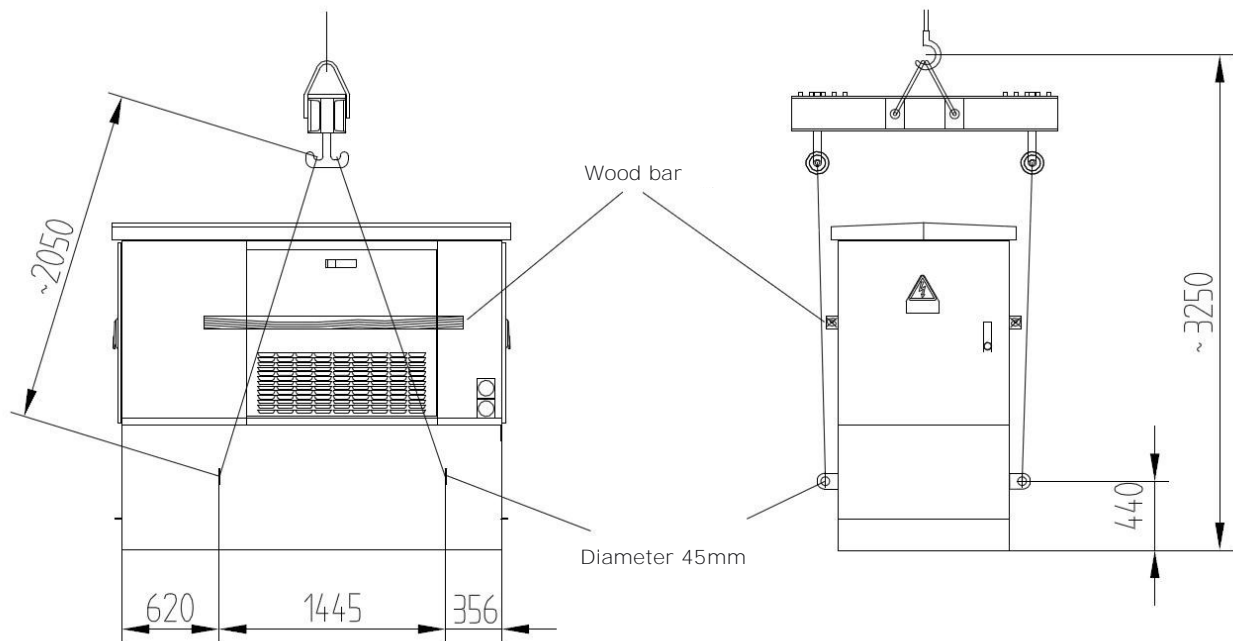


Thickness of horizontal level concrete-base-plate about 200mm
 or
 paved, horizontal level sand bed
 depending on ground

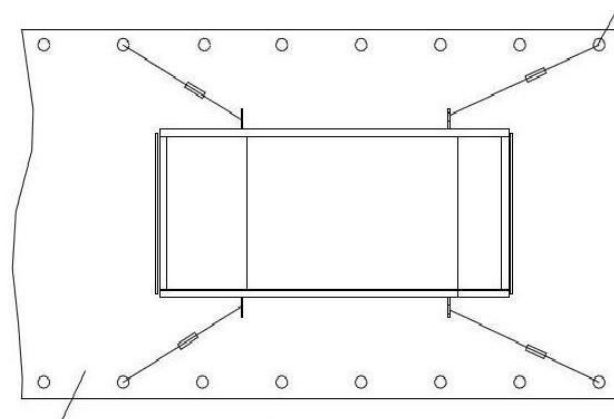
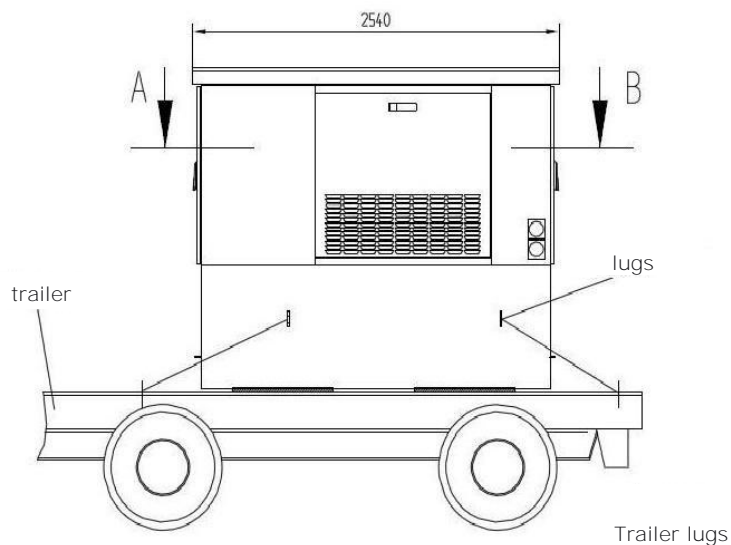
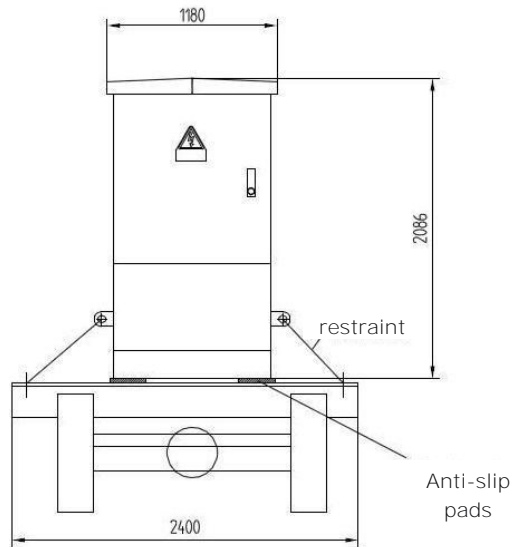
Soil pressure up to 150 kN/m²



Lifting plan
LCS-E.7

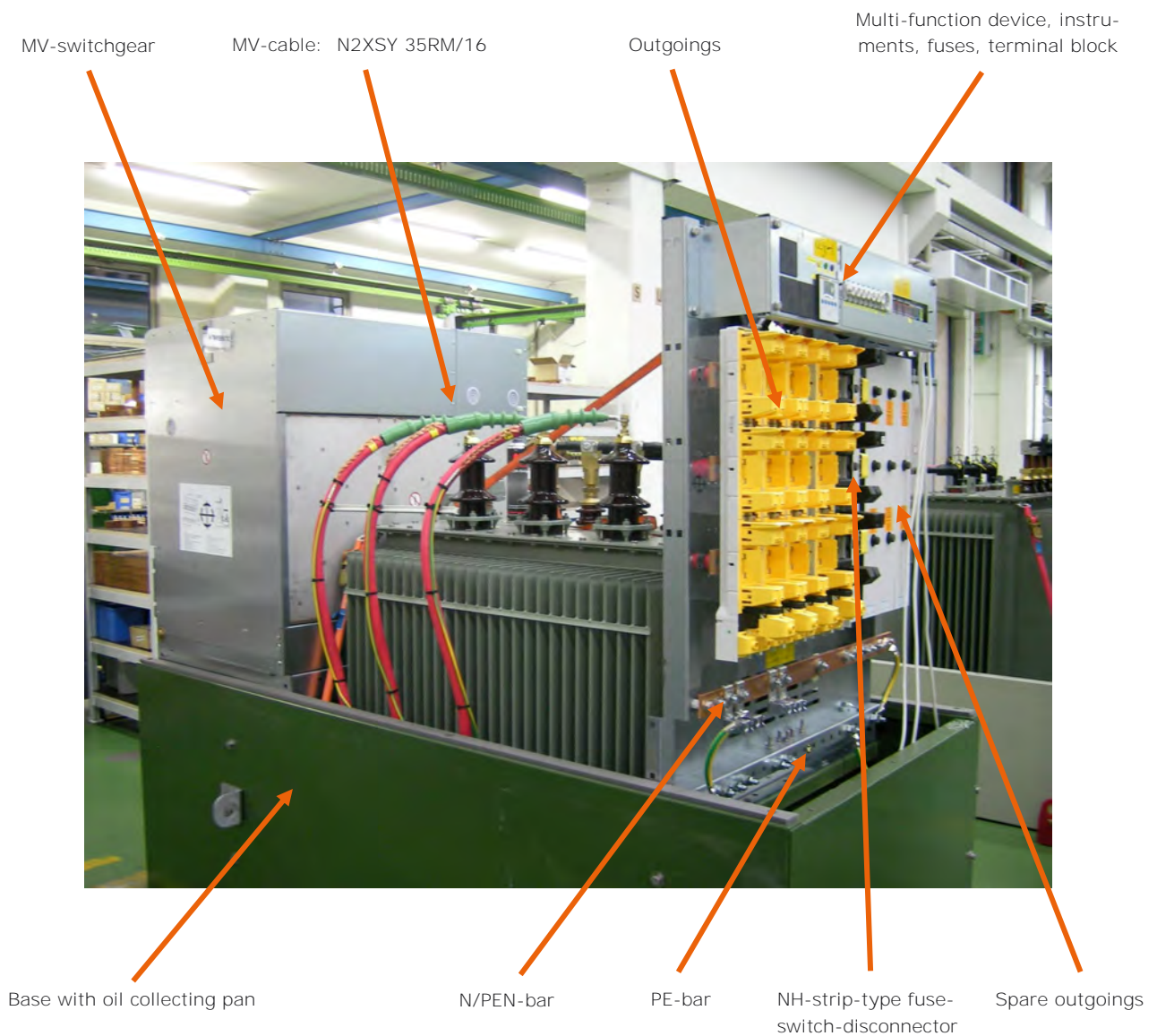


**Loading plan
 LCS-E.7**

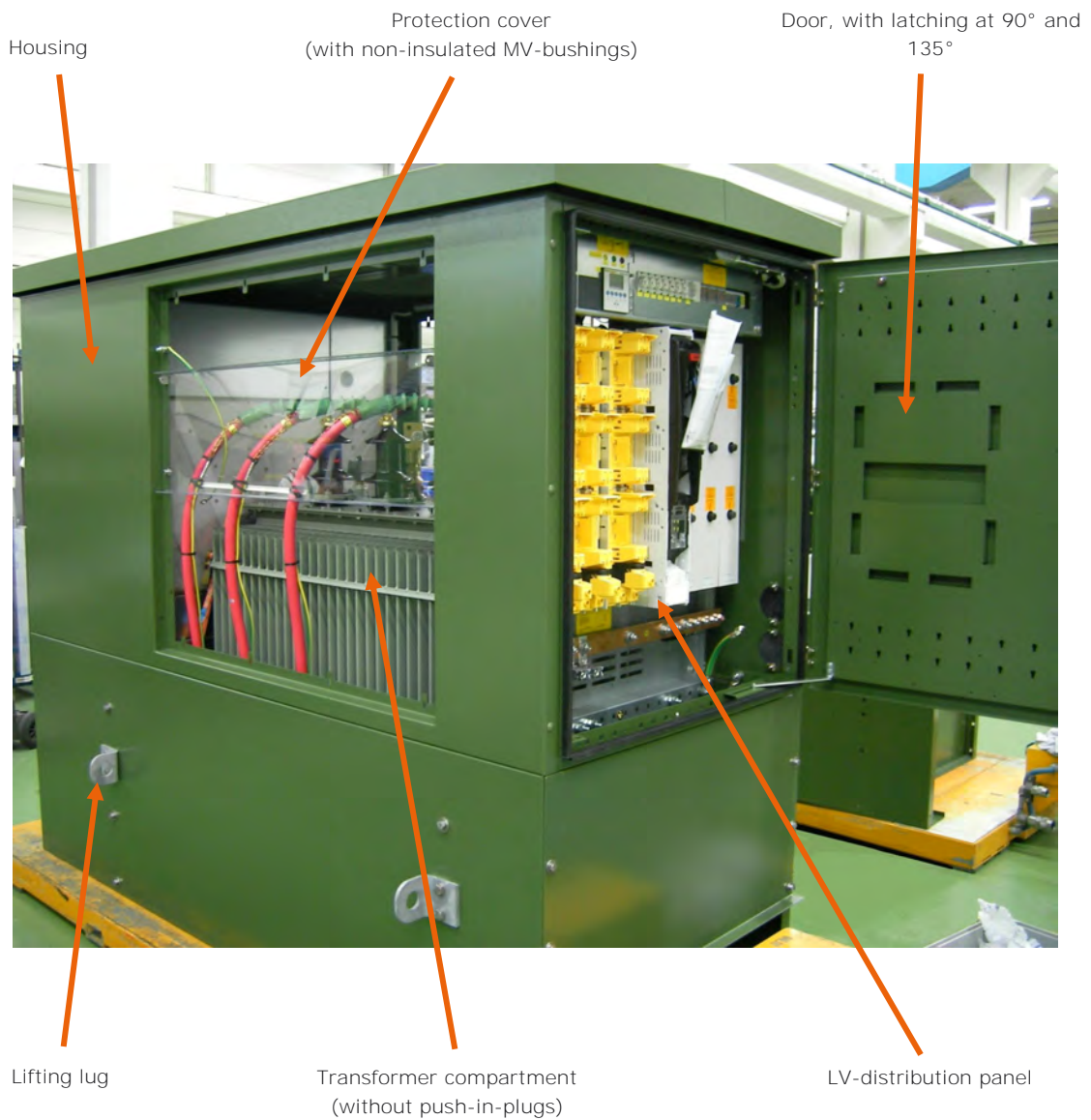


trailer
 Section view A-B

**Example LCS-E.7
 without housing**



**Example LCS-E.7
with housing**





NDV400

Lahmeyer Compactstation® **NDV400**

is suitable for transformers with:

Power	up to	800 kVA
Voltage	up to	24 kV

Use:

Longside operated
Grid-, Customer- or connection substation with
several LV- and MV-measurements possible

Dimensions:

Footprint	4.35 m ²
Area with opened doors	6.50 - 8.90 m ²
L x W x H	3010 x 1710 x 2411 mm

Masses:

Empty housing	ca.	820 kg
Total (approx. with DIN-transformer 630kVA and equipment)	ca.	3800 kg

Design:

Housing:

Housing class = 20K
Steel sheet, galvanised and powder coated,
Transformer-compartment accessible by push-in
plug,
lockable doors for MV- and LV-compartment
Standard colour: Pebble grey (RAL 7032)
other RAL-colours possible (additional charge),
Graffiti-protection possible

Base:

With oil collecting pan
steel sheet, galvanised and powder coated,
with Lahmeyer-cable inlets

Equipment:

MV-compartment:

SBG	HV-fuse-comp. (air-insulated)	12/24 kV
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SF6-insulated MV-switchgears with max.:

Siemens	8DJH	4-field
ABB	SafePlus/SafeRing	4-field
Schneider	FBX	4-field

MV-measurement (single compartment) for
3 current- and 3 voltage instrument transformers

Transformer:

Distribution transformer	max. 800 kVA (SBG)
Cast-resin transformer	max. 400 kVA

max. dimensions transformer:

L x W x H (top tank) = 1650 x 900 x 1900 mm*

*(max. length with 4-field MV-switchgear L=1350 mm)

LV-distribution:

LV-fuse switch size 3/4a	up to 1250 A
or LV-strip type fuse disconnecter	910 A
or MCCB	up to 1250 A

max. 14 outgoing

LV-strip type fuseways or

LV-strip type fuse disconnecter size 1/2/3

option:

additional rooms, e.g. for:

Meter boxes

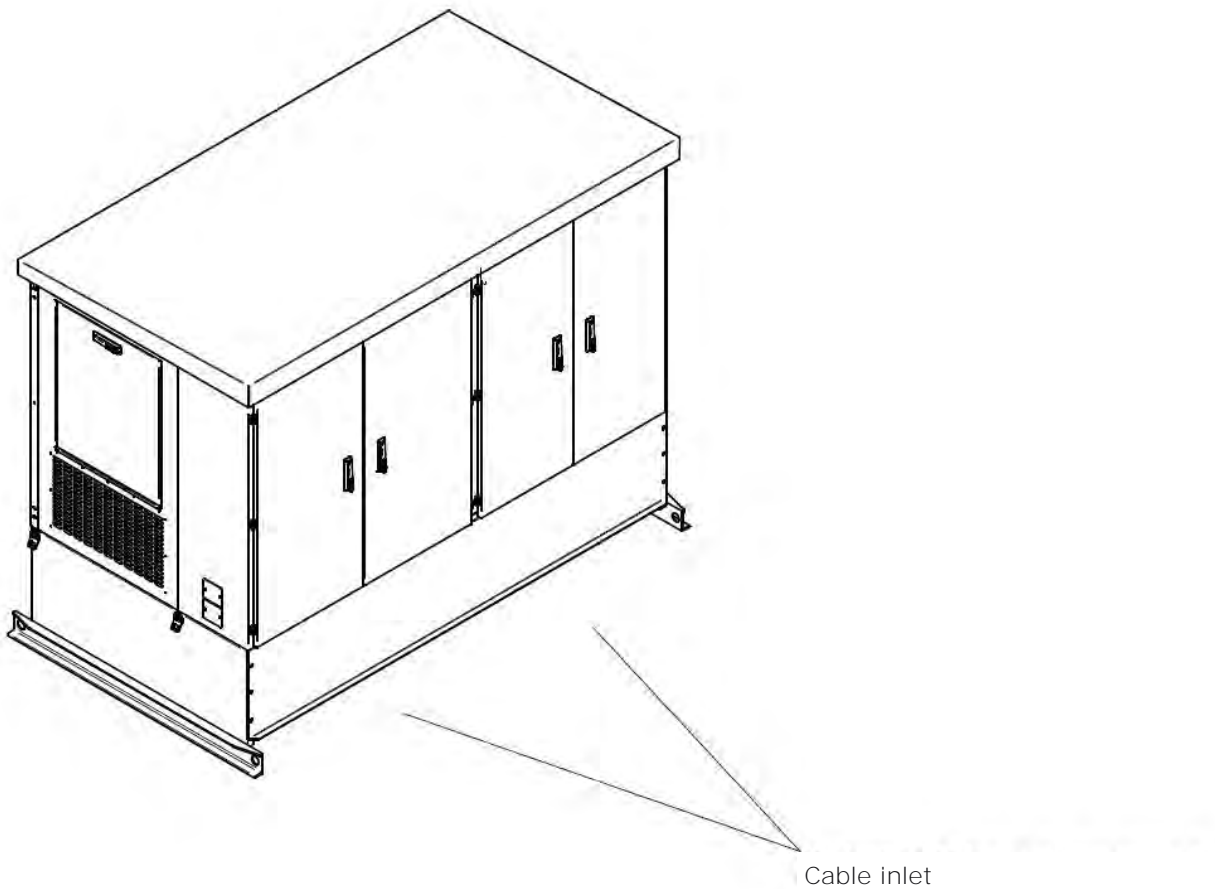
reactive power or fixed compensation
protection / telecontrol equipment

General equipment options:

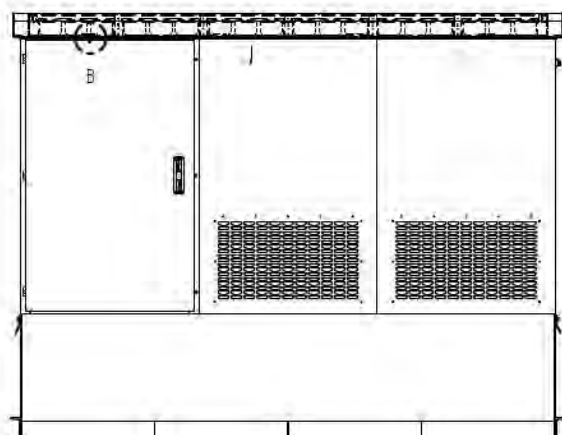
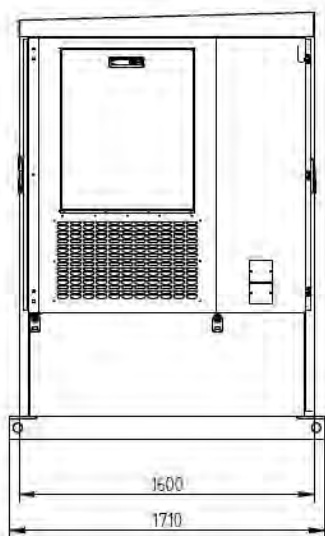
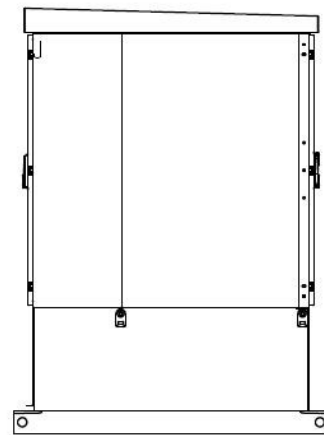
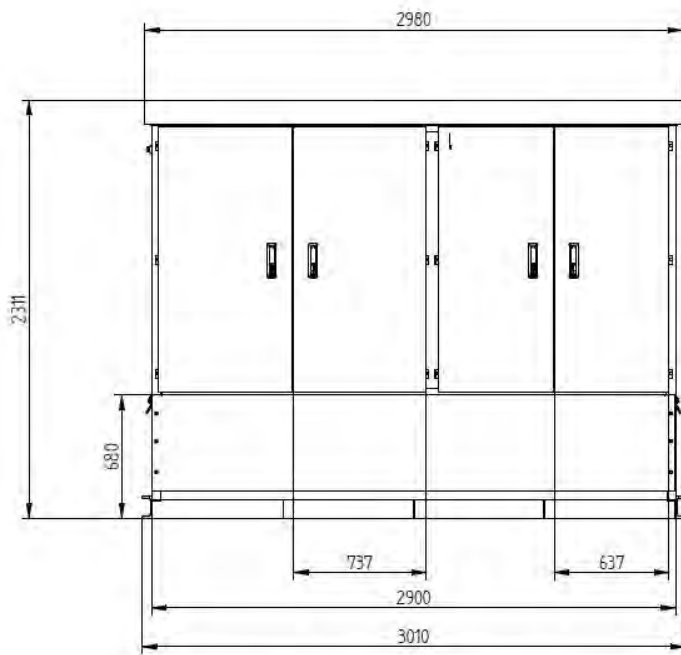
synchronisation, fuses
current metering
voltage metering
multimeters
sockets
lighting

NDV400

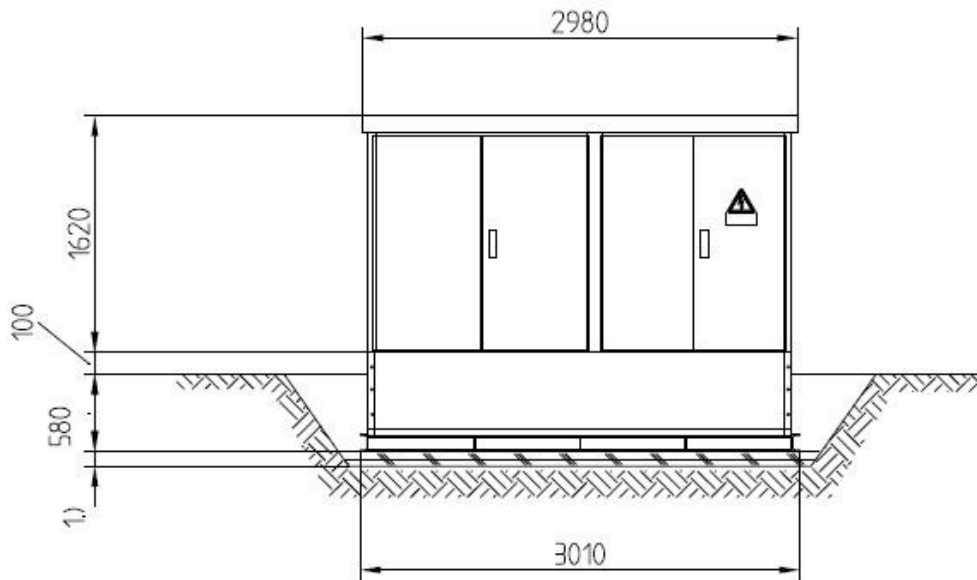
Schematic view NDV400
(example with MV righthand)



Dimension sheet NDV400
 (example with MV righthand)

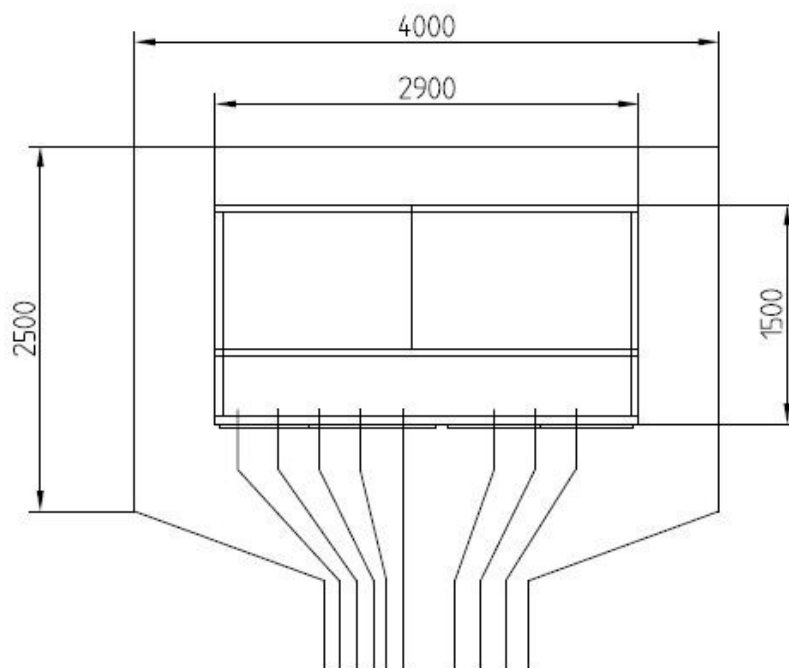


**Excavation plan
 NDV400**



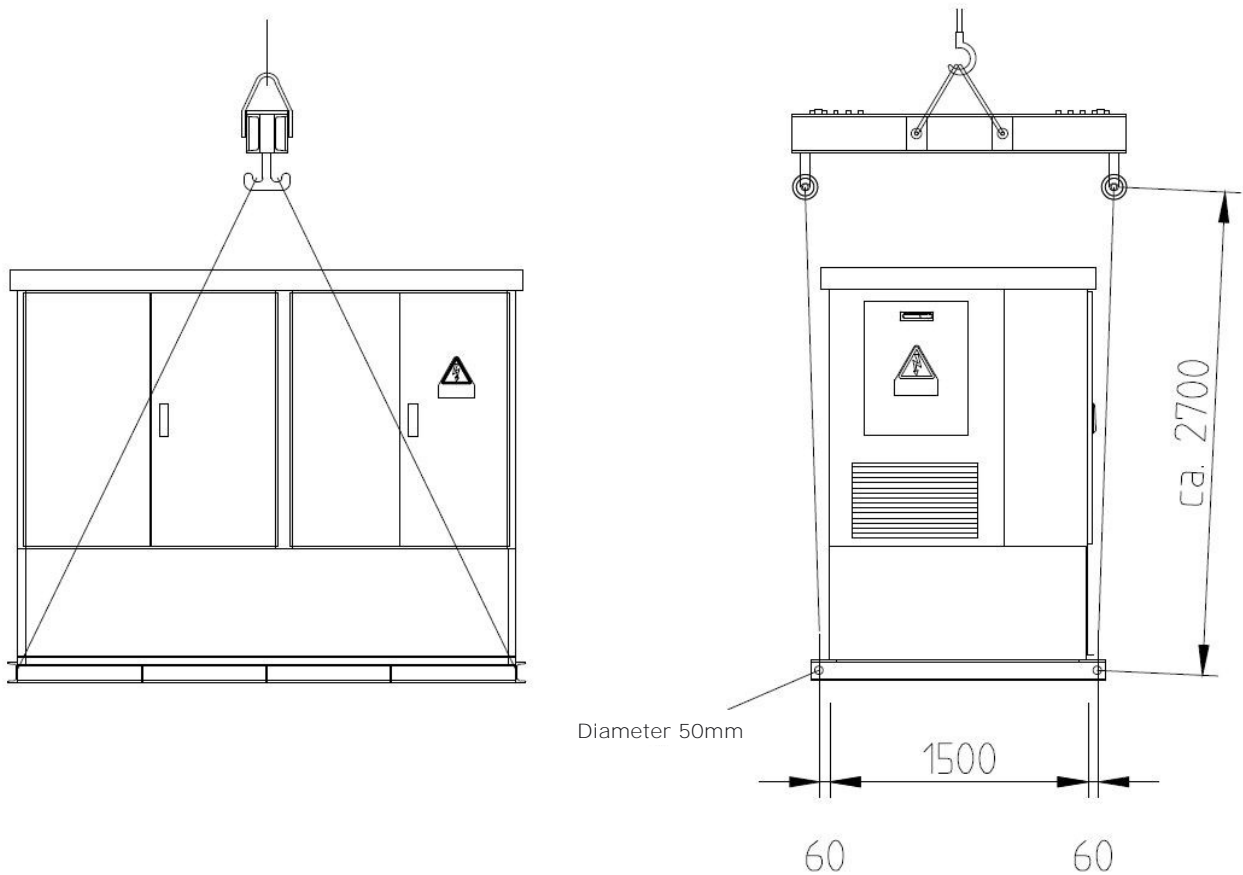
Thickness of horizontal level concrete-base-plate about 200mm

Soil pressure up to 25 kN/m²



NDV400

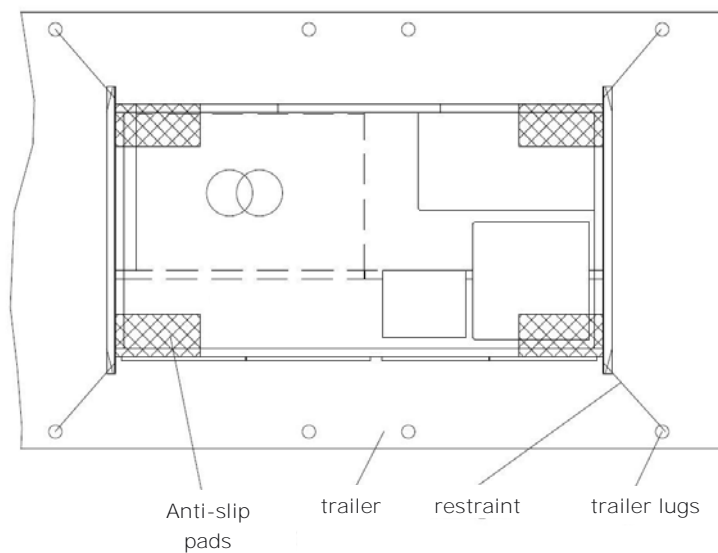
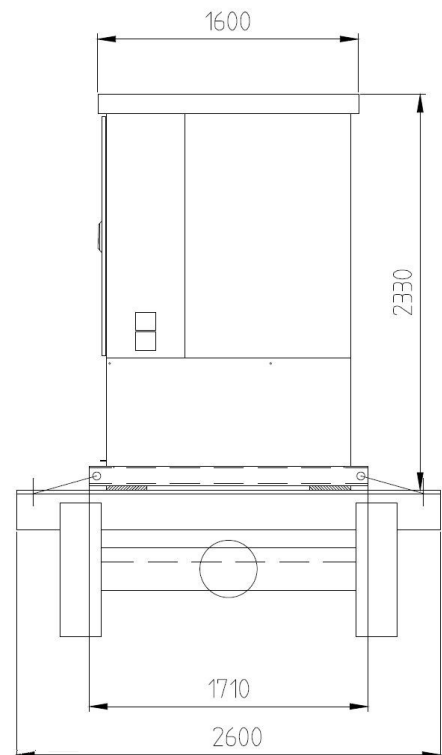
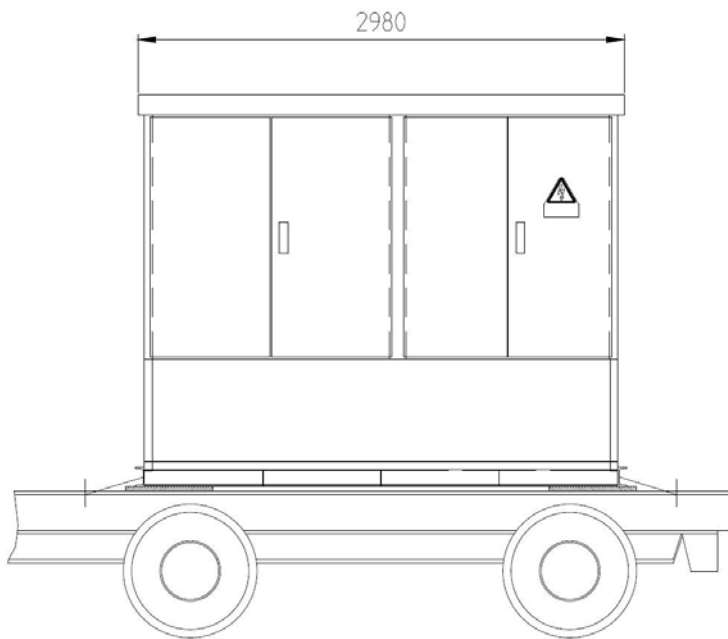
Lifting plan
NDV400



Adjust lifting gear due to centre of gravity

NDV400

**Loading plan
 NDV400**



Examples
NDV400



NDV400 with concrete base

Lahmeyer Compactstation®

NDV400 with concrete base

is suitable for transformers with:

Power	up to	800 kVA
Voltage	up to	24 kV

Use:

Longside operated
Grid-, Customer- or connection substation with
several LV- and MV-measurements possible

Dimensions:

Footprint	4.35 m ²
Area with opened doors	6.50 - 8.90 m ²
L x W x H	3010 x 1600 x 2420 mm

Masses:

Empty housing	ca. 3510 kg
Total (approx. with DIN-transformer 630kVA and equipment)	ca. 6200 kg

Design:

Housing:

Housing class = 20K
Steel sheet, galvanised and powder coated,
Transformer-compartment accessible by push-in
plug,
lockable doors for MV- and LV-compartment
Standard colour: Pebble grey (RAL 7032)
other RAL-colours possible (additional charge),
Graffiti-protection possible

Base:

With oil collecting pan
concrete (thickness upper edge: 110mm)
with Lahmeyer-cable inlets

Equipment:

MV-compartment:

SBG	HV-fuse-comp. (air-insulated)	12/24 kV
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SF6-insulated MV-switchgears with max.:

Siemens	8DJH	4-field
ABB	SafePlus/SafeRing	4-field
Schneider	FBX	4-field

MV-measurement (single compartment) for
3 current- and 3 voltage instrument transformers

Transformer:

Distribution transformer	max. 800 kVA (SBG)
Cast-resin transformer	max. 400 kVA

max. dimensions transformer:

L x W x H (top tank) = 1650 x 900 x 1900 mm*

*(max. length with 4-field MV-switchgear L=1350 mm)

LV-distribution:

LV-fuse switch size 3/4a	up to 1250 A
or LV-strip type fuse disconnecter	910 A
or MCCB	up to 1250 A

max. 14 outgoing

LV-strip type fuseways or

LV-strip type fuse disconnecter size 1/2/3

option:

additional rooms, e.g. for:

Meter boxes

reactive power or fixed compensation

protection / telecontrol equipment

General equipment options:

synchronisation, fuses

current metering

voltage metering

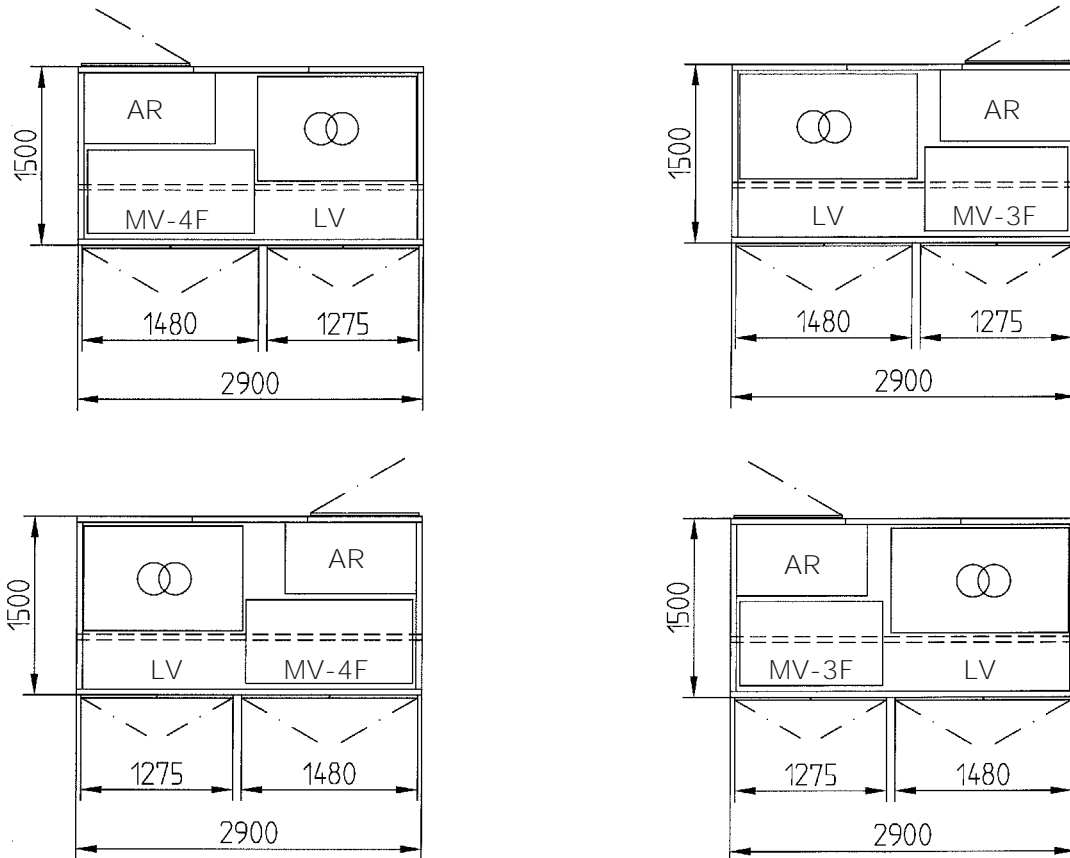
multimeters

sockets

lighting

NDV400 with concrete base

Matrix NDV400 with concrete base



AR = additional room, e.g. measuring compartment

Maximum width:

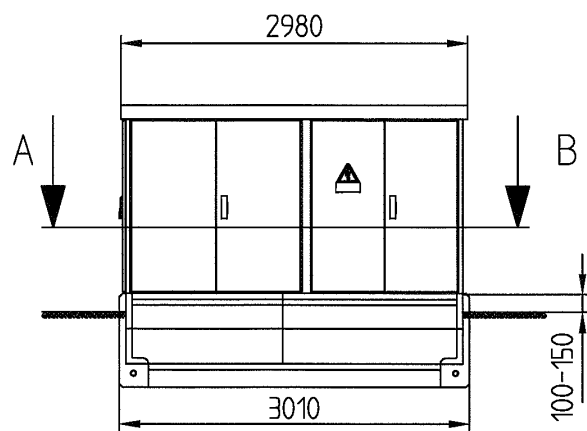
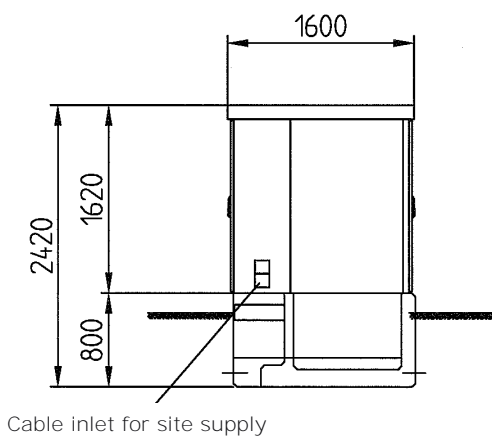
MV: max. 1410 mm
LV: max. 1200 mm
Transformer: max. 1350 mm

Maximum width:

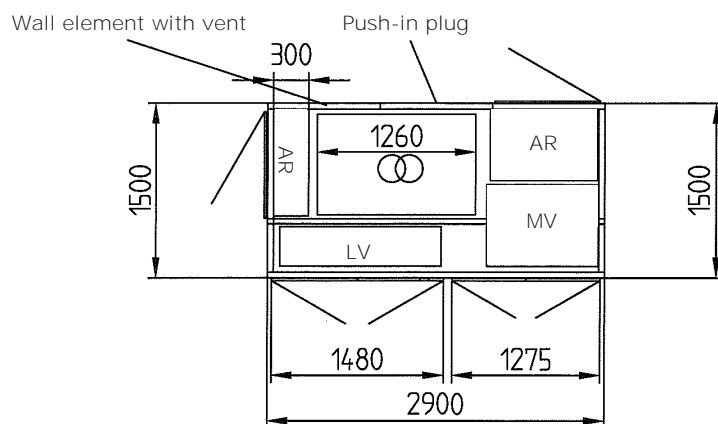
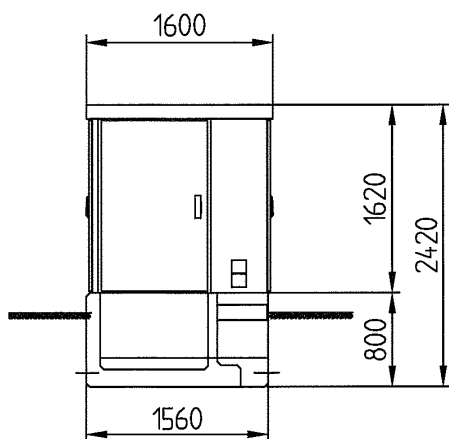
MV: max. 1210 mm
LV: max. 1400 mm
Transformer: max. 1550 mm

NDV400 with concrete base

Dimension sheet
NDV400 with concrete base
 (Example with righthand MV-switchgear)



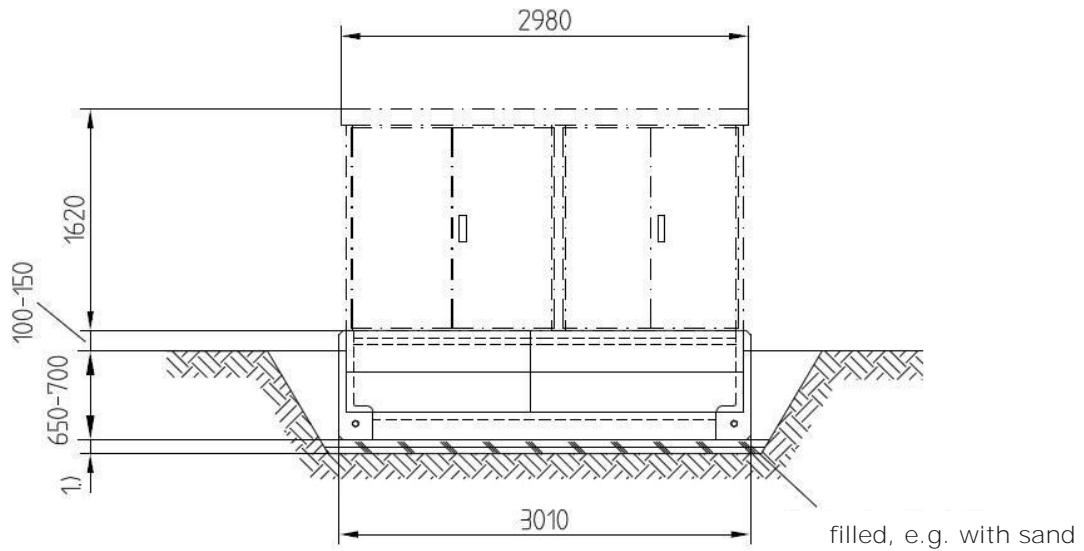
Profile A - B



AR = additional room, e.g. measuring compartment

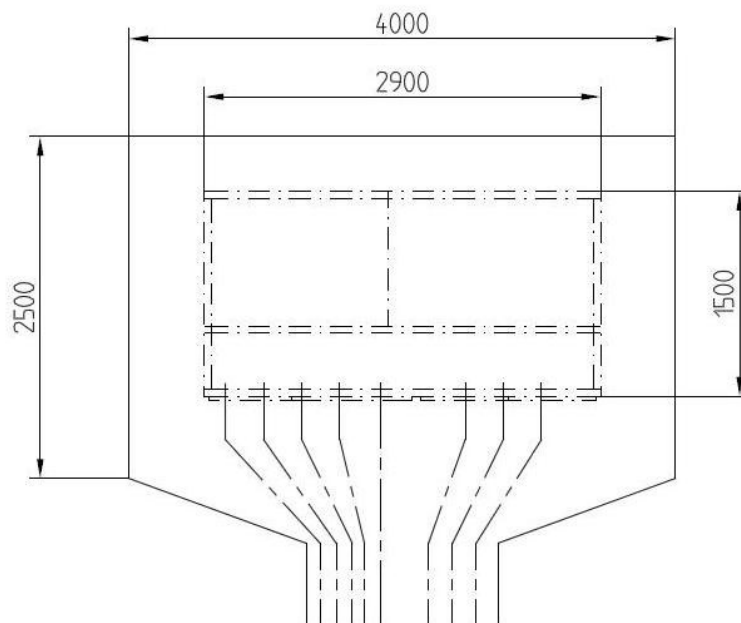
NDV400 with concrete base

Excavation plan NDV400 with concrete base



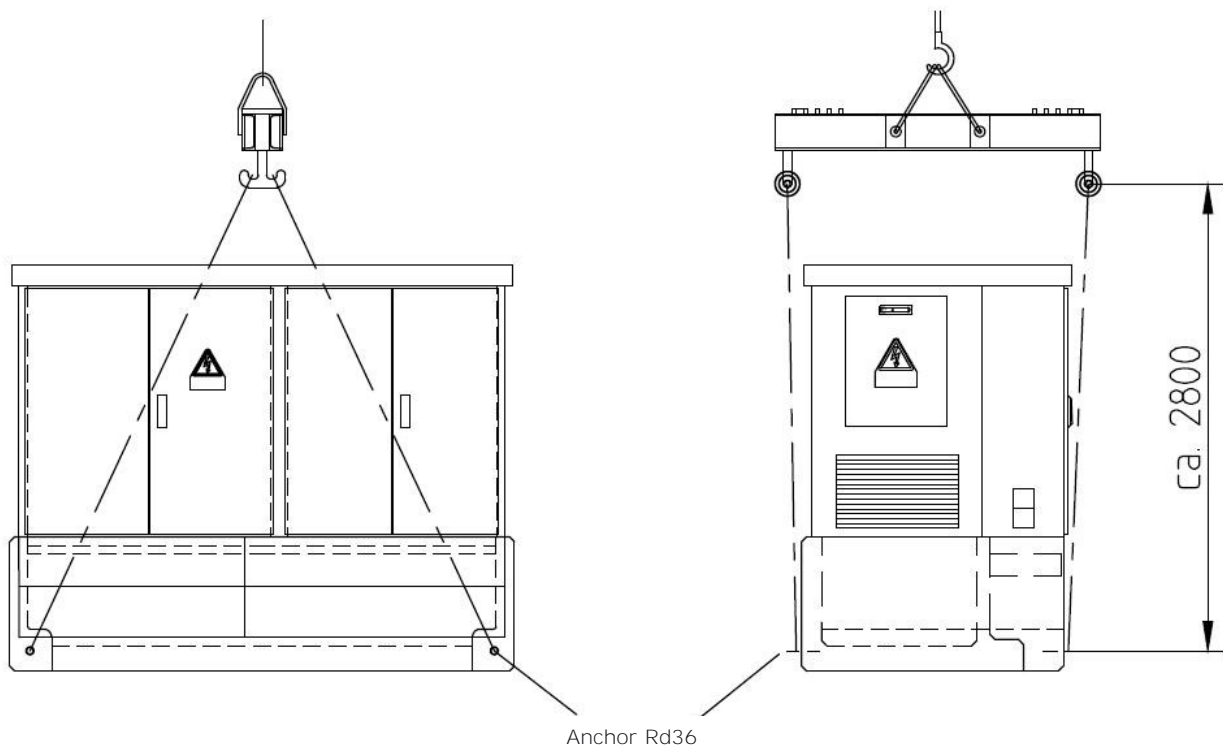
Thickness of horizontal level concrete-base-plate about 200mm
 or horizontal level sand bed

Soil pressure up to 90 kN/m²



NDV400 with concrete base

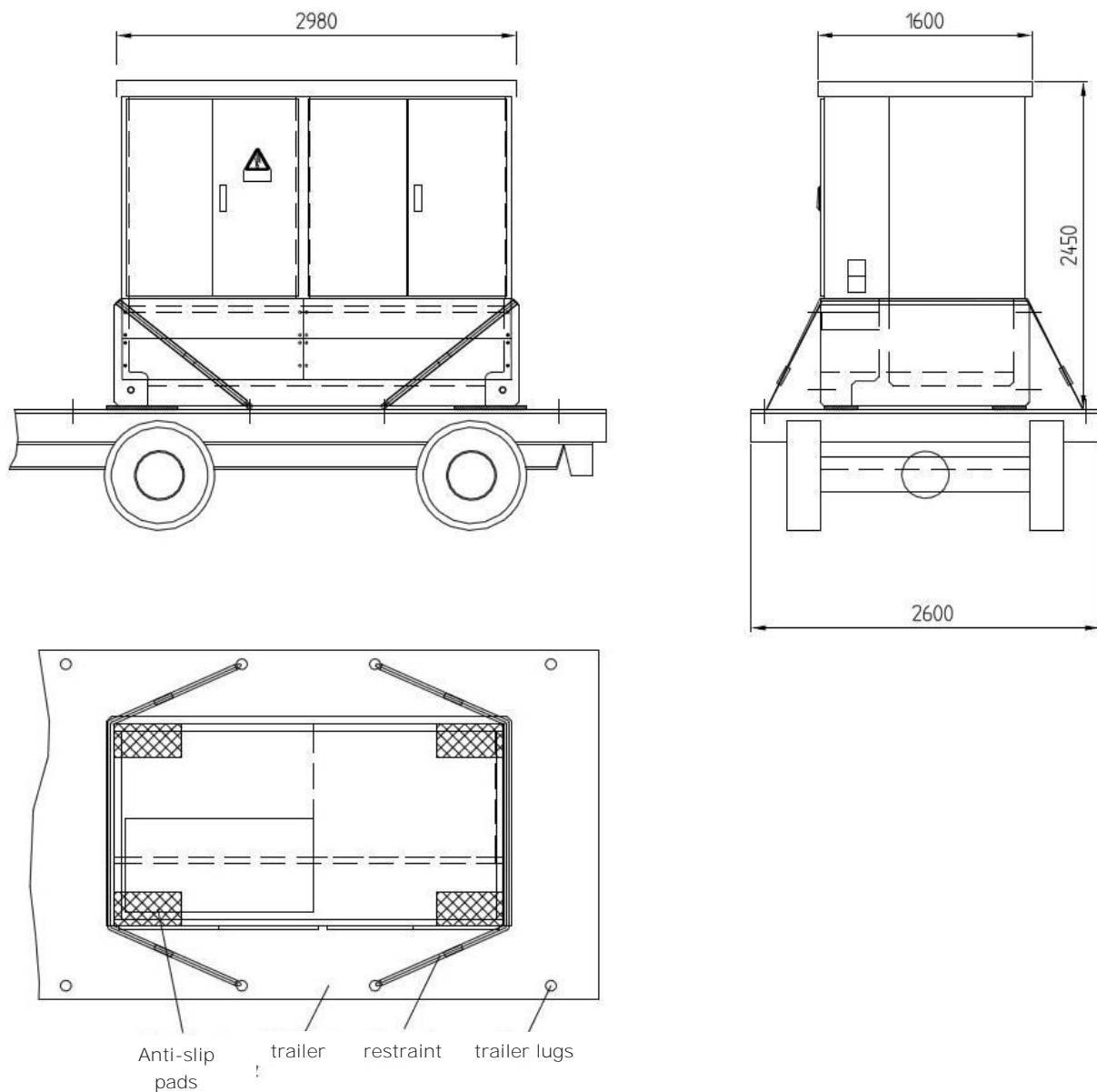
Lifting plan NDV400 with concrete base



Adjust lifting gear due to centre of gravity

NDV400 with concrete base

Loading plan NDV400 with concrete base



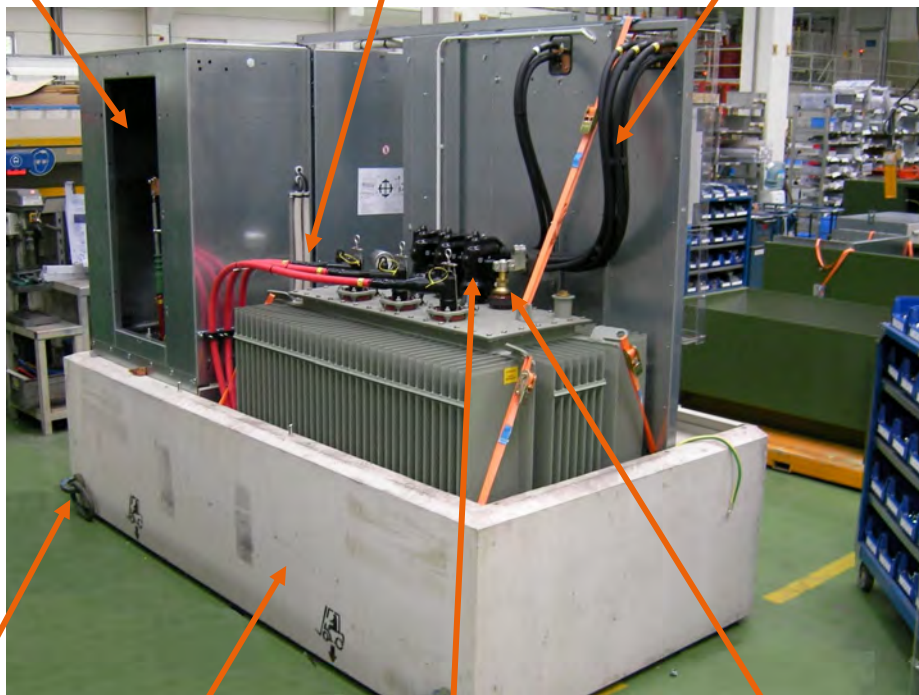
NDV400 with concrete base

Example NDV400 with concrete base without housing

MV-measuring compartment
make: SBG

MV-cable: N2XS(Y) 35RM/16

LV-cable: NSGAFÖU 185mm²



Lifting points /
anchors

Concrete base

Pfisterer-covers

Pfisterer-clamps

Detail view MV-measuring compartment



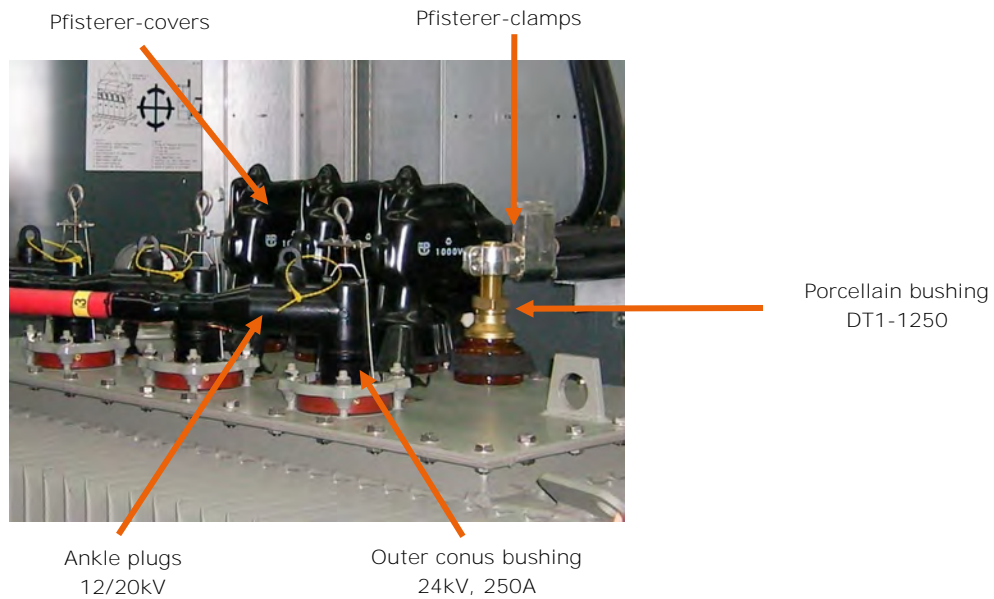
Voltage transformer (VT)

Current transformer (CT)

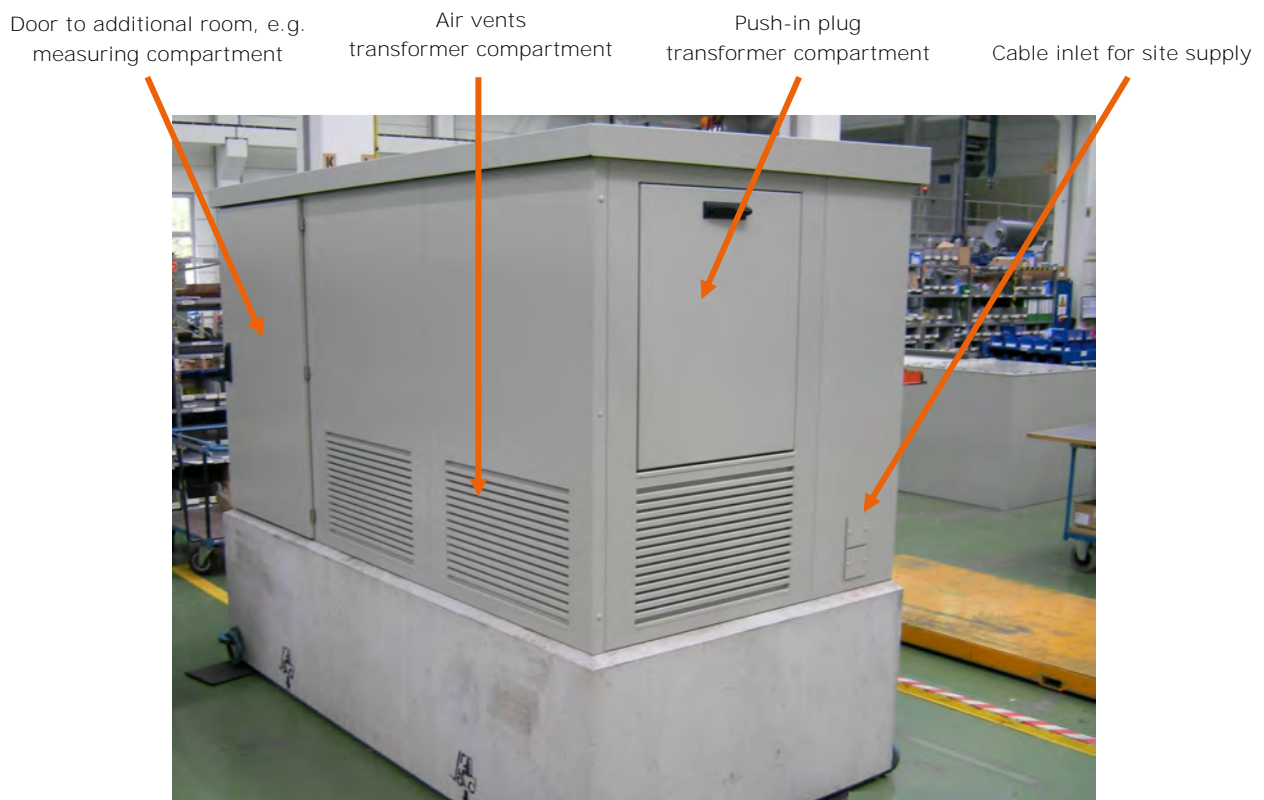
MV-cables

NDV400 with concrete base

Detail view transformer-connections



Example NDV400 with concrete base with housing





NDV1600

Lahmeyer Compactstation® NDV1600

is suitable for transformers with:

Power up to 1600 kVA

Voltage up to 24 kV

Use:

Frontside operated
Grid-, Customer- or connection substation with
several LV- and MV-measurements possible

Dimensions:

Footprint 6.38 m²

Area with opened doors 10.60 m²

L x W x H 3000 x 2300 x 2340 mm

Masses:

Empty housing ca. 1500 kg

Total ca. 6500 kg
(approx. with DIN-transformer 1600kVA and equipment)

Design:

Housing:

Housing class (up to 1600 kVA) = 15K
Steel sheet, galvanised and powder coated,
Transformer-compartment accessible by push-in
plug,
lockable doors for MV- and LV-compartment
Standard colour: Pebble grey (RAL 7032)
other RAL-colours possible (additional charge),
Graffiti-protection possible

Base:

With oil collecting pan
steel sheet, galvanised and powder coated,
with Lahmeyer-cable inlets

Equipment:

MV-compartment:

SBG HV-fuse-comp. 12/24 kV
(air-insulated)

SF6-insulated MV-switchgears with max.:

Siemens 8DJH 5-field

ABB SafePlus/SafeRing 5-field

Schneider FBX 5-field

MV-measurement (single compartment) for
3 current- and 3 voltage instrument transformers

Transformer:

Distribution transformer max. 1600 kVA (SBG)

Cast-resin transformer max. 1000 kVA

LV-distribution:

LV-fuse switch size 3/4a up to 1600 A

or LV-strip type fuse disconnecter 2000 A

or MCCB / ACB up to 2500 A

max. 20 outgoing

LV-strip type fuseways or

LV-strip type fuse disconnecter size 1/2/3

option:

additional rooms, e.g. for:

Meter boxes

reactive power or fixed compensation

protection / telecontrol equipment

General equipment options:

synchronisation, fuses

current metering

voltage metering

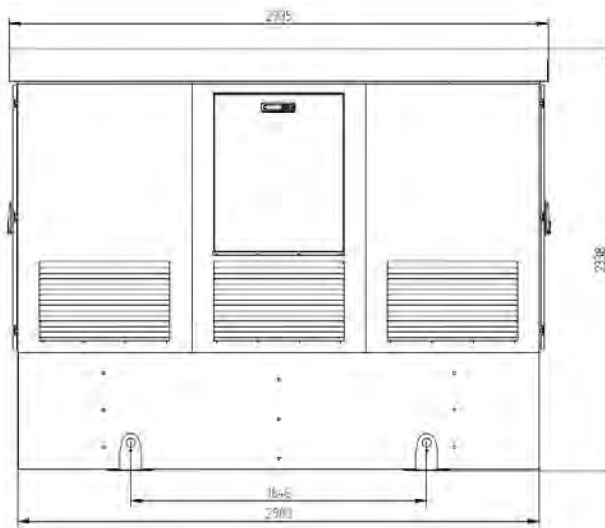
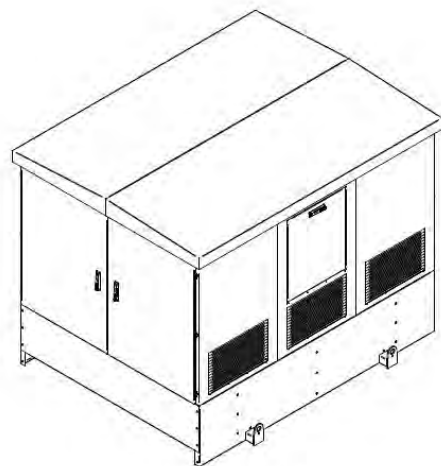
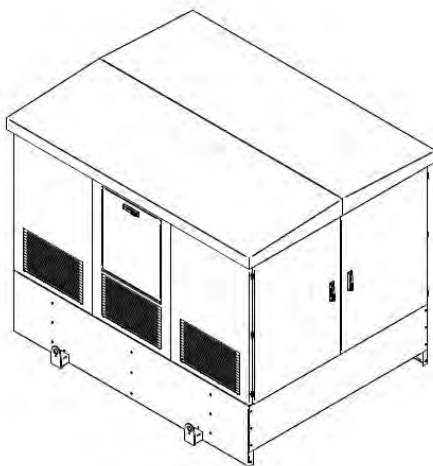
multimeters

sockets

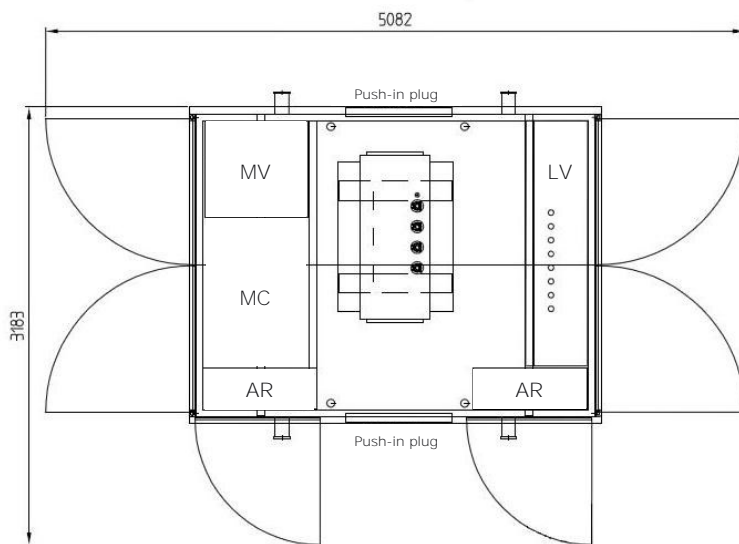
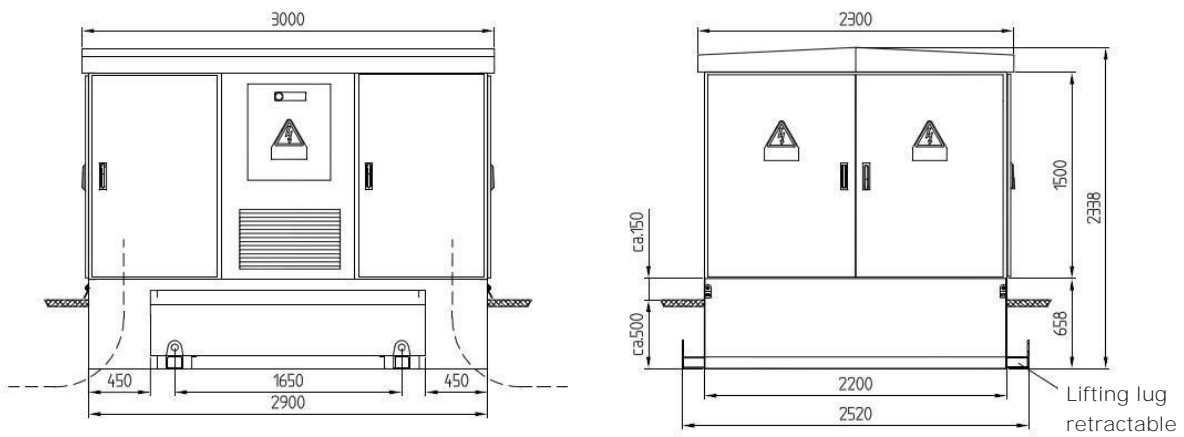
lighting

NDV1600

Dimension sheet
NDV1600



Dimension sheet
NDV1600 with two additional rooms



MC = measuring compartment
AC = Additional room

NDV1200-2600

Dimensions and masses NDV1200 to NDV2600

Type	Footprint in m ² (ca.)	Area with opened doors in m ² (ca.)	Empty housing in kg (ca.)	Total mass in kg (ca.)	Approx. with transformer
NDV 1200	6.30	10.30	1400	6000	1250kVA
NDV 1600	6.38	10.60	1500	6500	1600kVA
NDV 1800	8.00	13.50	1550	8500	2000kVA
NDV 2500	6.38	10.60	1500	8500	2500kVA
NDV 2600	8.00	13.50	1600	8500	2500kVA

Type	L in mm	W in mm	H in mm
NDV 1200	3000	2100	2340
NDV 1600	3000	2300	2340
NDV 1800	3284	2300	2340
NDV 2500	3000	2300	2640
NDV 2600	3284	2300	2640

Equipment NDV1200 - NDV2600:

Transformer:

Distribution transformer max. 2500 kVA

Dry-type transformer max. 1000 kVA

NDV1800 and NDV2600 can be equipped with
two transformers max. 1000 kVA.

LV-distribution:

LV-fuse switch size 3/4a up to 1600 A
or LV-strip type fuse disconnecter 2000 A
or MCCB up to 4000 A

max. 20 outgoing

LV-strip type fuseways or
LV-strip type fuse disconnecter size 1/2/3

option:

additional rooms, e.g. for:

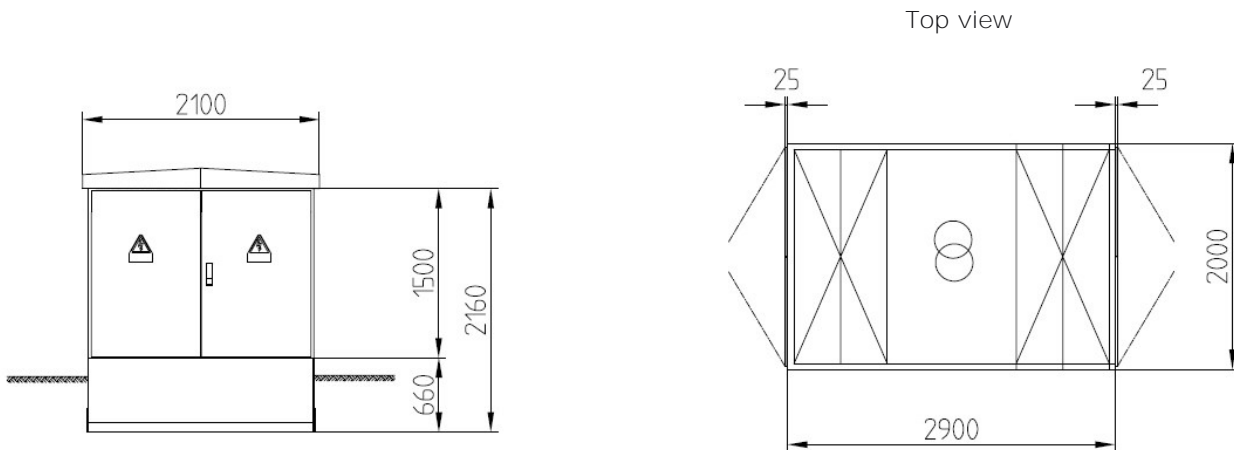
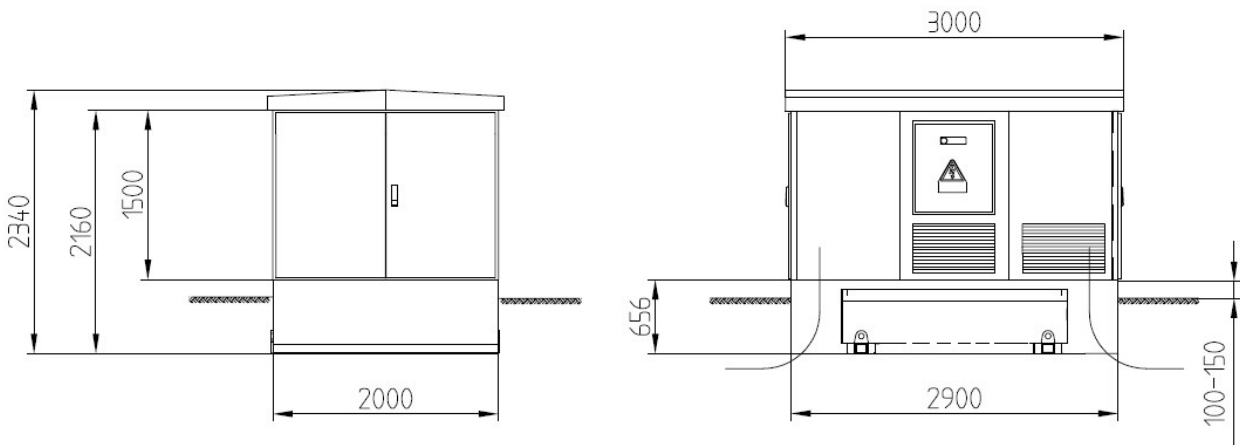
Meter boxes
reactive power or fixed compensation
protection / telecontrol equipment

General equipment options:

synchronisation
current metering
voltage metering
multimeters
sockets
lighting
fuses

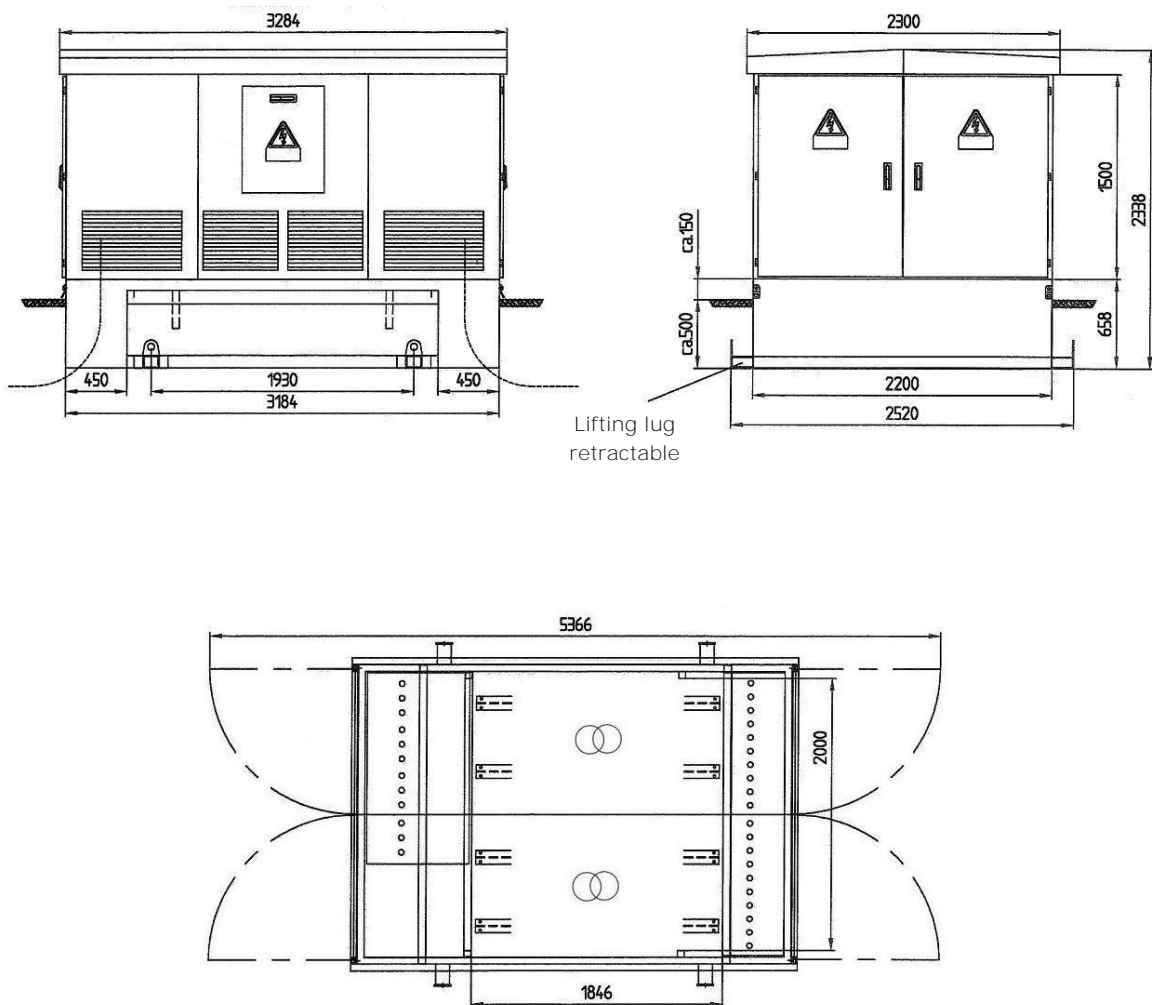
NDV1200-2600

Dimension sheet
NDV1200



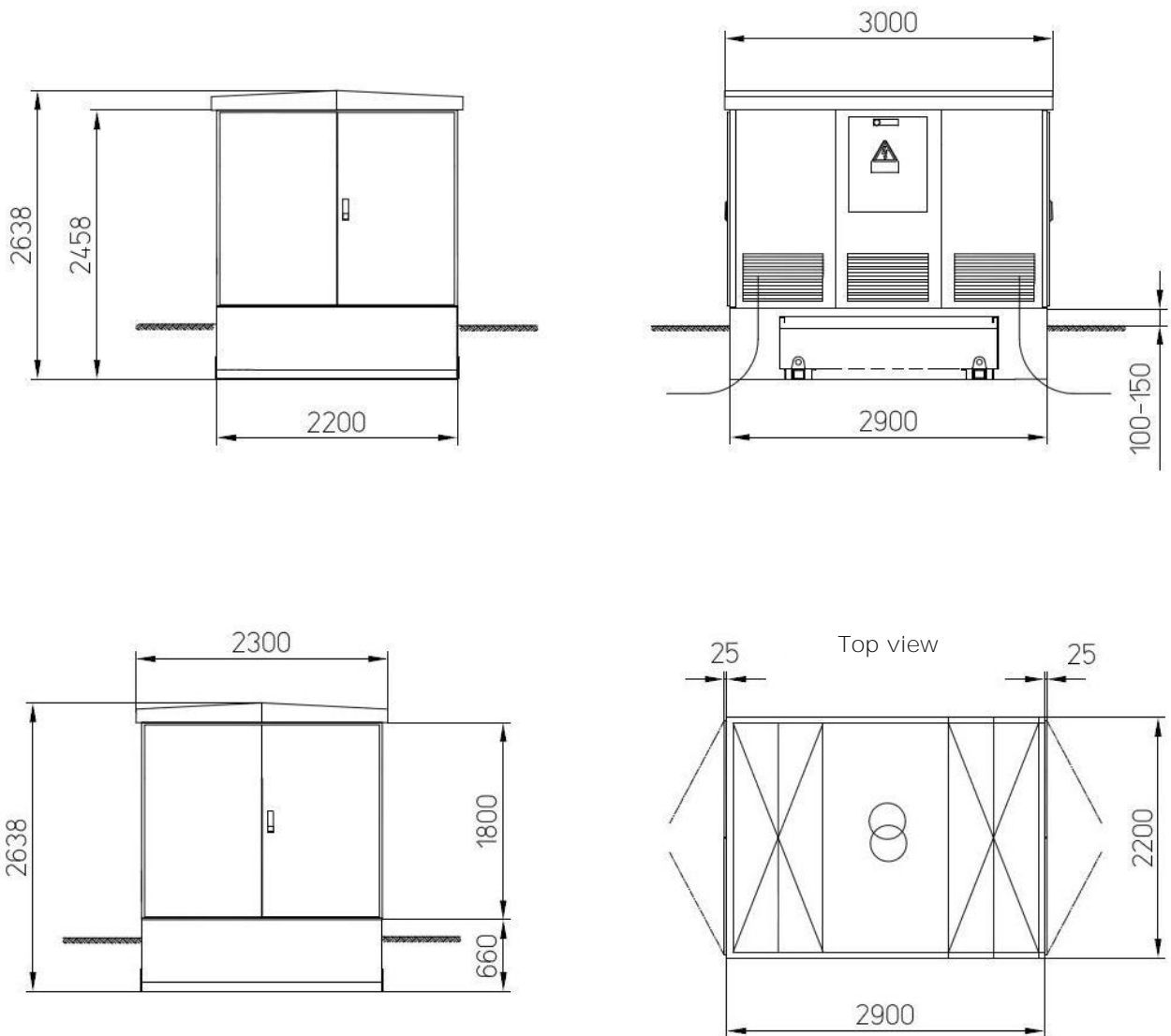
NDV1200-2600

Dimension sheet
NDV1800



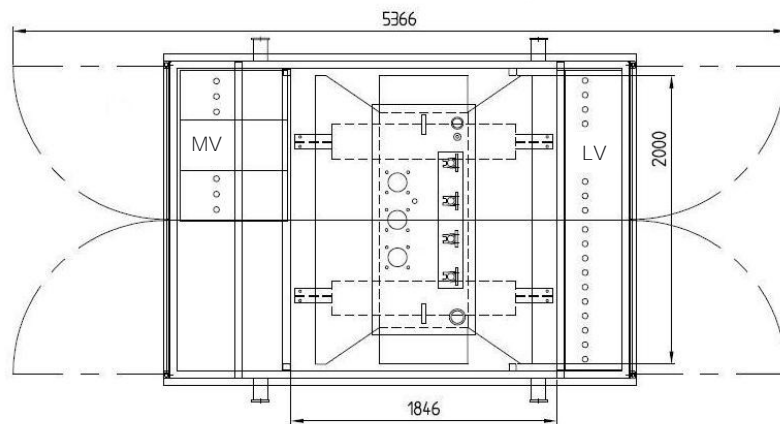
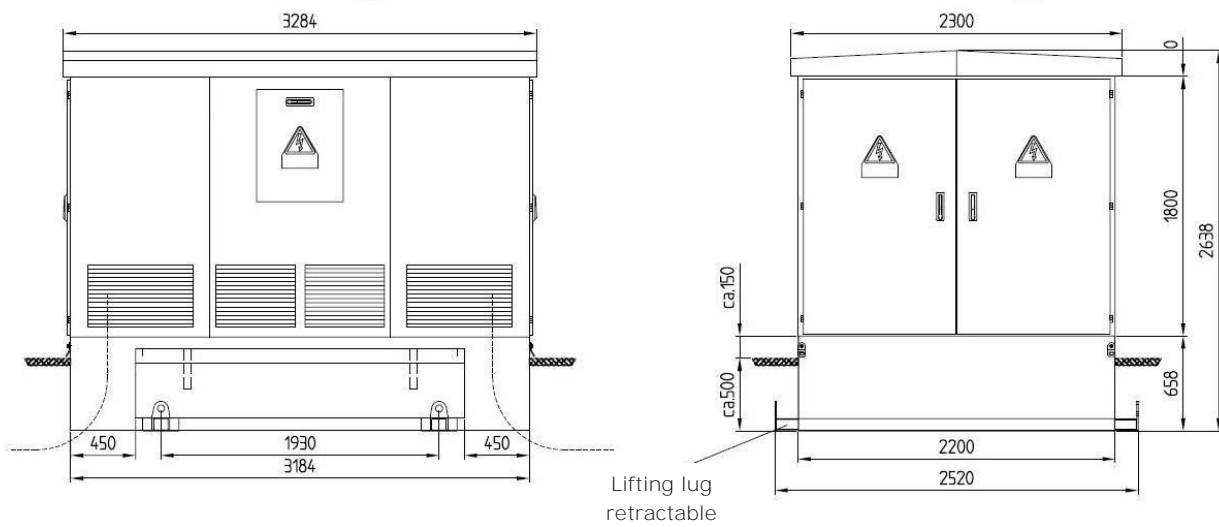
NDV1200-2600

Dimension sheet NDV2500



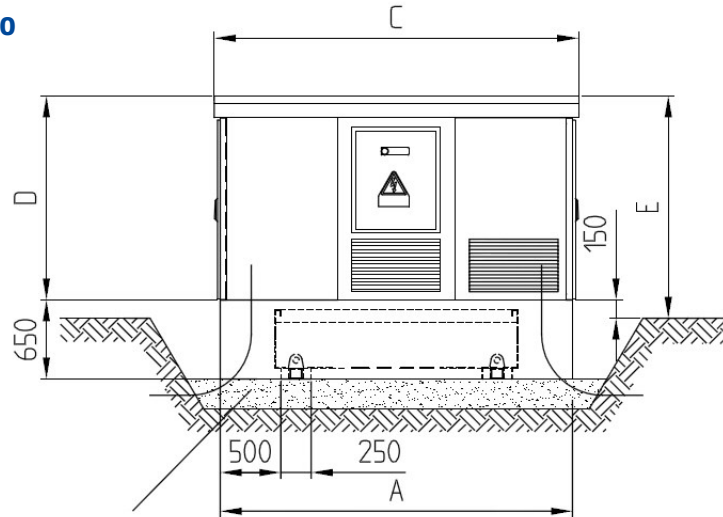
NDV1200-2600

Dimension sheet
NDV2600



NDV1200-2600

Excavation plan NDV1200 to NDV2600

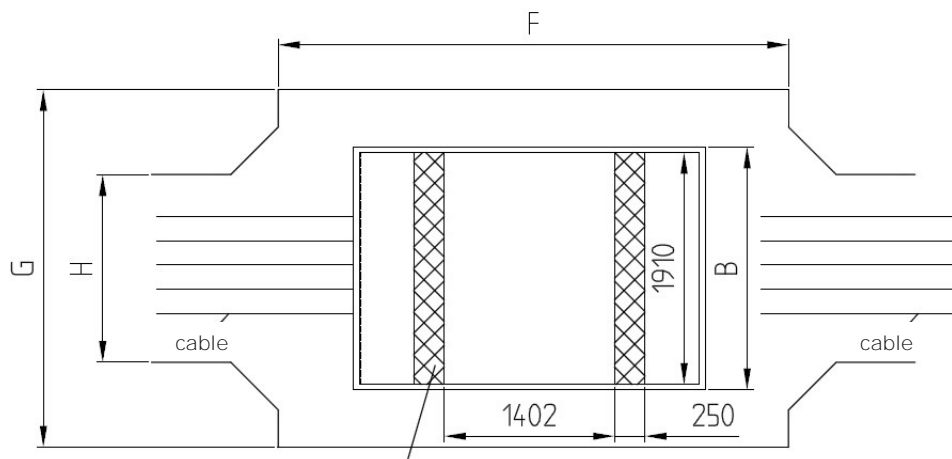


Thickness of horizontal level concrete-base-plate about 200mm

Soil pressure up to 65 kN/m²

Dimensions in mm

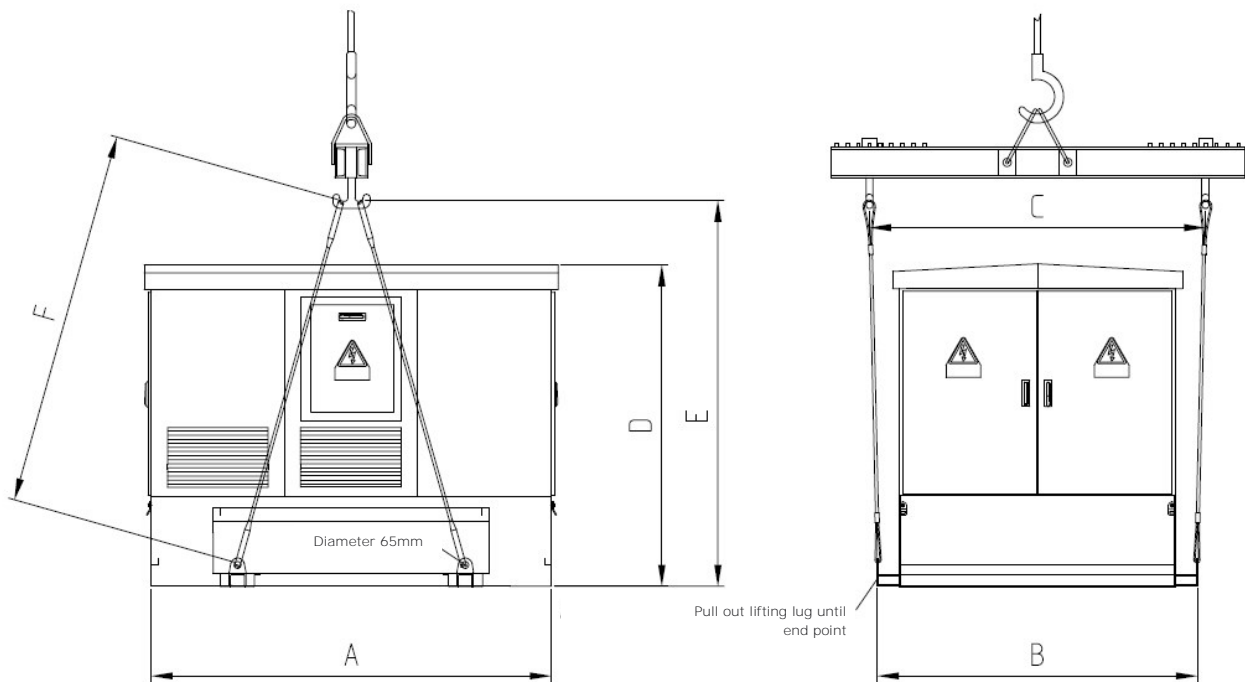
	A	B	C	D	E	F	G	H
NDV1200	2900	2000	3000	1680	1830	4200	2945	1545
NDV1600	2900	2200	3000	1680	1830	4200	3145	1745
NDV1800	3184	2200	3284	1680	1830	4484	3145	1745
NDV2500	2900	2200	3000	1980	2130	4200	3145	1745
NDV2600	3184	2200	3284	1980	2130	4484	3145	1745



Contact area min. 2 x 0.48m²

NDV1200-2600

Lifting plan NDV1200 to NDV2600

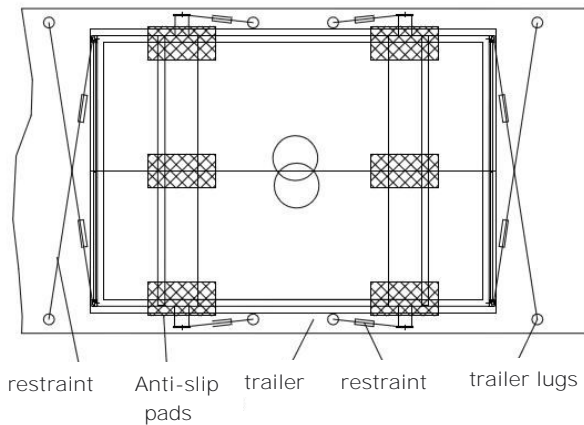
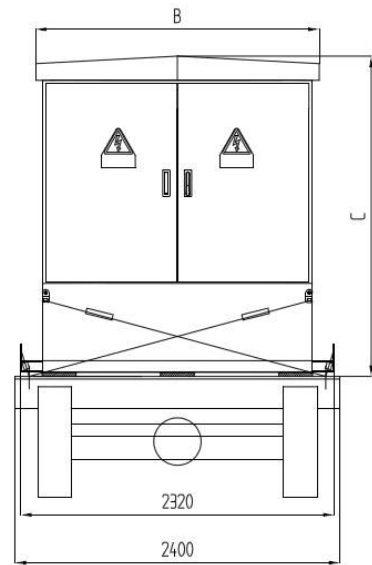
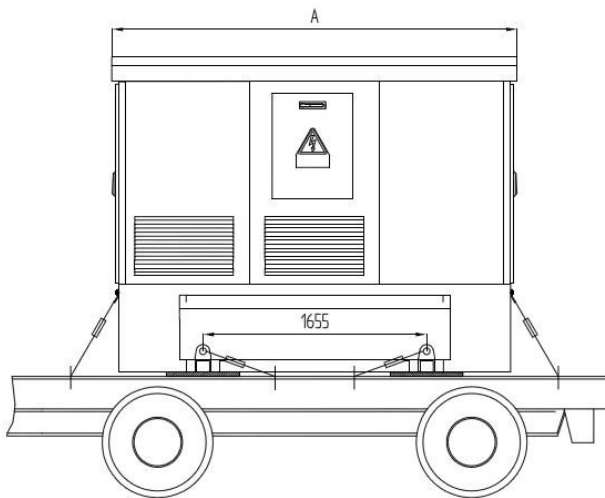


Dimensions in mm

	A	B	C	D	E	F
NDV1200	2900	2320	2400	2330	2800	ca. 2800
NDV1600	2900	2520	2600	2330	2800	ca. 2800
NDV1800	3184	2520	2600	2330	2800	ca. 2800
NDV2500	2900	2520	2600	2630	3100	ca. 3100
NDV2600	3184	2520	2600	2630	3100	ca. 3100

NDV1200-2600

Loading plan NDV1200 to NDV2600



Dimensions in mm

	A	B	C
NDV1200	3000	2100	2368
NDV1600	3000	2300	2368
NDV1800	3284	2300	2368
NDV2500	3000	2300	2668
NDV2600	3284	2300	2668

NDV1200-2600

Example NDV1600



**Example NDV2500
with customised colour**



**Example NDV1600
base with oil collecting pan**





WPS2500

Lahmeyer Compactstation® **WPS2500**

is suitable for transformers with:

Power	up to	4.0 MVA
Voltage	up to	36 kV

Use:

Grid-, Customer- or connection substation with several LV- and MV-measurements possible

Dimensions:

Footprint	11.5 m ²
Area with opened doors	max. 23.5 m ²
Max. L x W x H	4500 x 2500 x 3080 mm
resp. L x W x H	4500 x 2500 x 2880 mm
<small>(depending on version)</small>	

Weights:

Empty housing	ca.	2600/3100 kg
Total	ca.	13500 kg
<small>(approx. with DIN-transformer 3800kVA and equipment)</small>		

Design:

Housing:

Housing class = 5K (3.8MVA-transformer)
Steel sheet, galvanised and powder coated,
Transformer-compartment accessible by push-in
plug, lockable doors for MV- and LV-compartment
Standard colour: Pebble grey (RAL 7032)
other RAL-colours possible (additional charge),
Graffiti-protection possible

Base:

base frame, hot-dip galvanised and powder
coated
with separate oil collecting pan
with Lahmeyer-cable inlets

Equipment:

MV-compartment:

SBG	HV-fuse-comp. (air-insulated)	12/24 kV
-----	----------------------------------	----------

SF6-insulated MV-switchgears with max.:

Siemens	8DJH / 8DJH36	2 x 4-field
ABB	SafePlus/SafeRing	2 x 4-field
Schneider	FBX	2 x 4-field

MV-measurement (single compartment) for
3 current- and 3 voltage instrument transformers

Transformer:

Distribution transformer	max. 4000 kVA (SBG)
Cast-resin transformer	max. 2000 kVA

max. dimensions transformer:

L x W x H (top tank) = 2500 x 2100 x 2200 mm

LV-distribution:

LV-fuse switch	size 3/4a	up to 1600 A
or LV-strip type fuse disconnecter		up to 2000 A
or MCCB / ACB		up to 5000 A

max. 18 outgoing

LV-strip type fuseways or

LV-strip type fuse disconnecter size 1/2/3

option:

additional rooms, e.g. for:

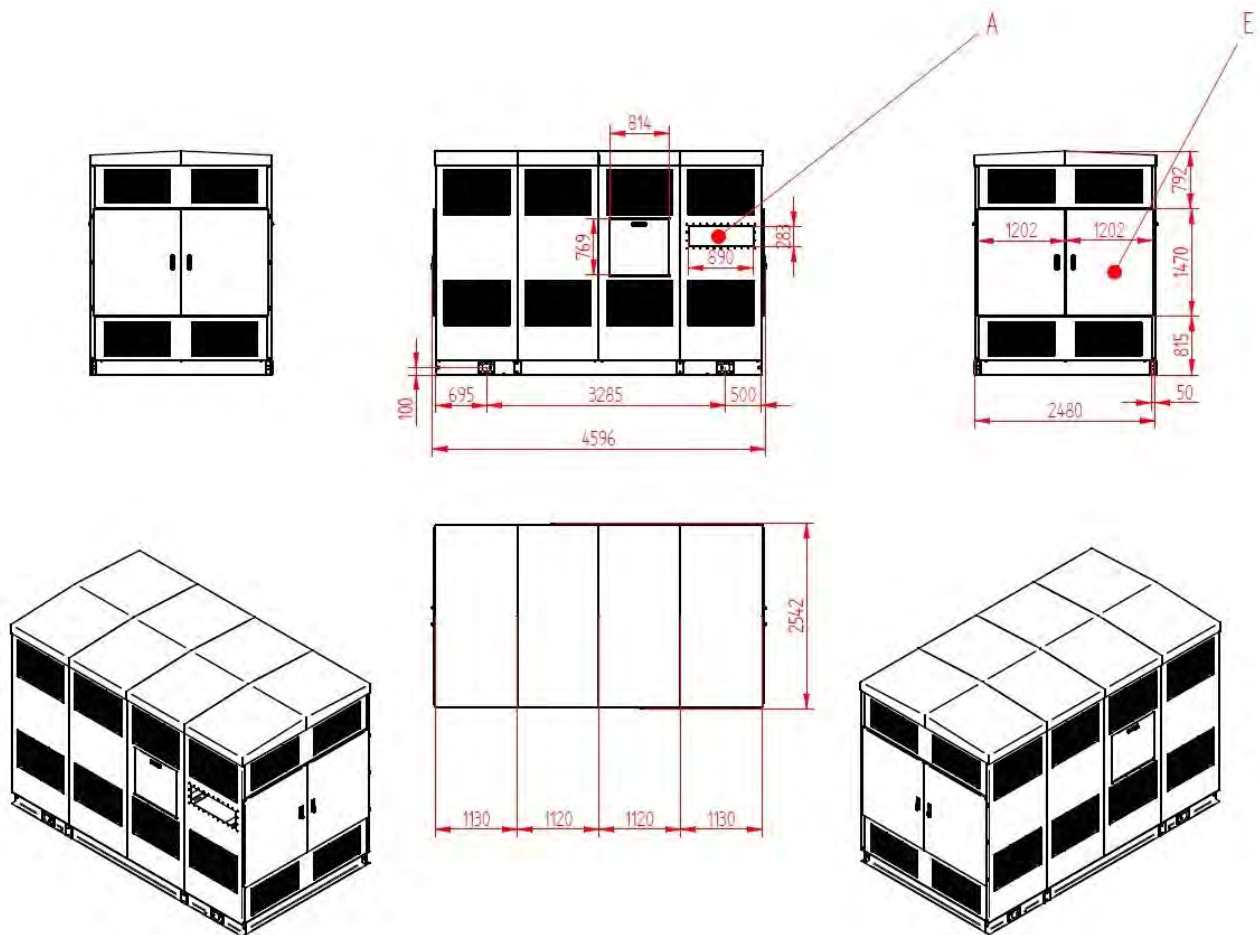
Meter boxes
reactive power or fixed compensation
protection / telecontrol equipment

General equipment options:

synchronisation, fuses
current metering
voltage metering
multimeters
sockets
lighting

WPS2500

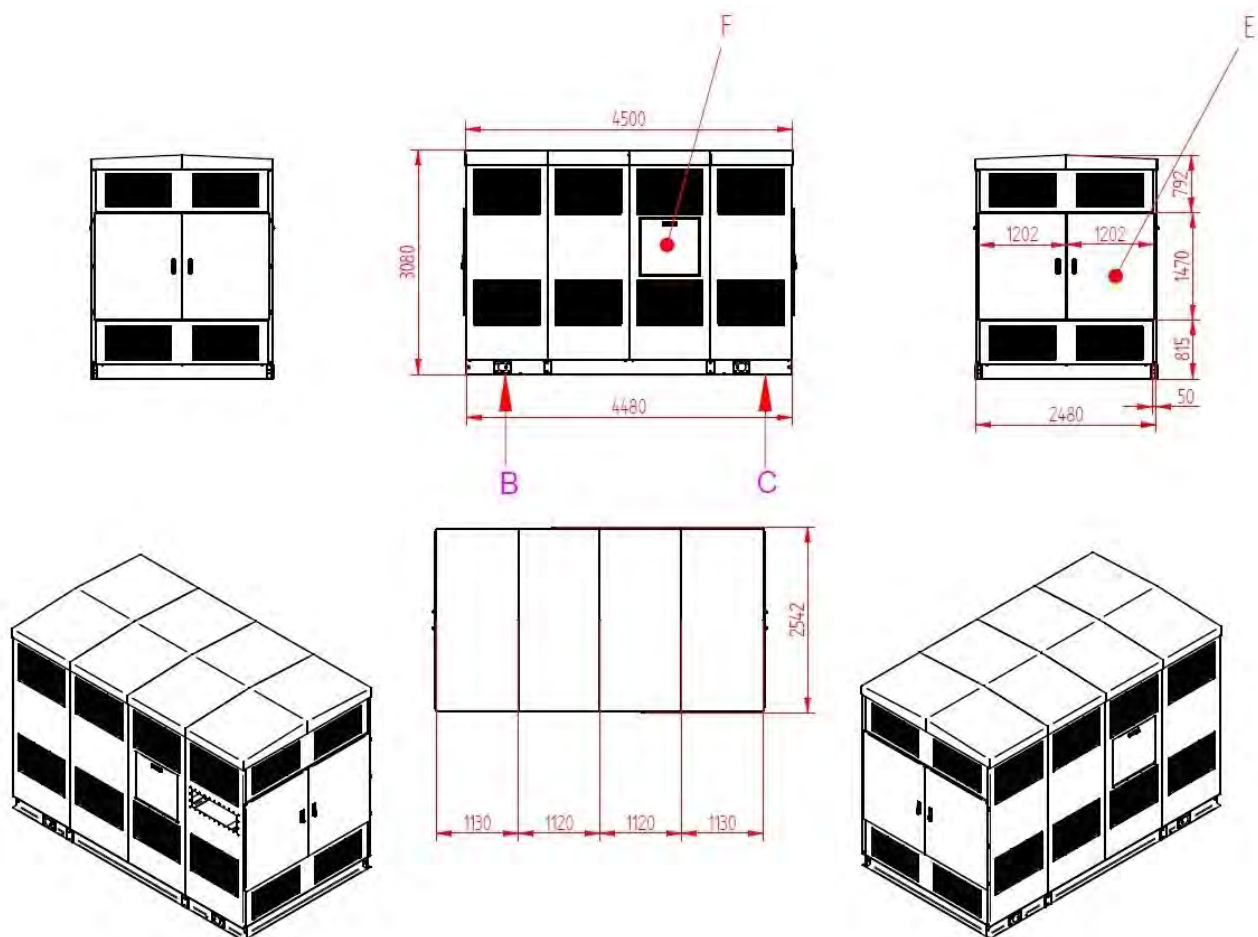
Dimension sheet
WPS2500 (tall version)



Key:

- A) Version 1 - LV-cable inlet longside
- E) doors with arretations at 90° and 120°

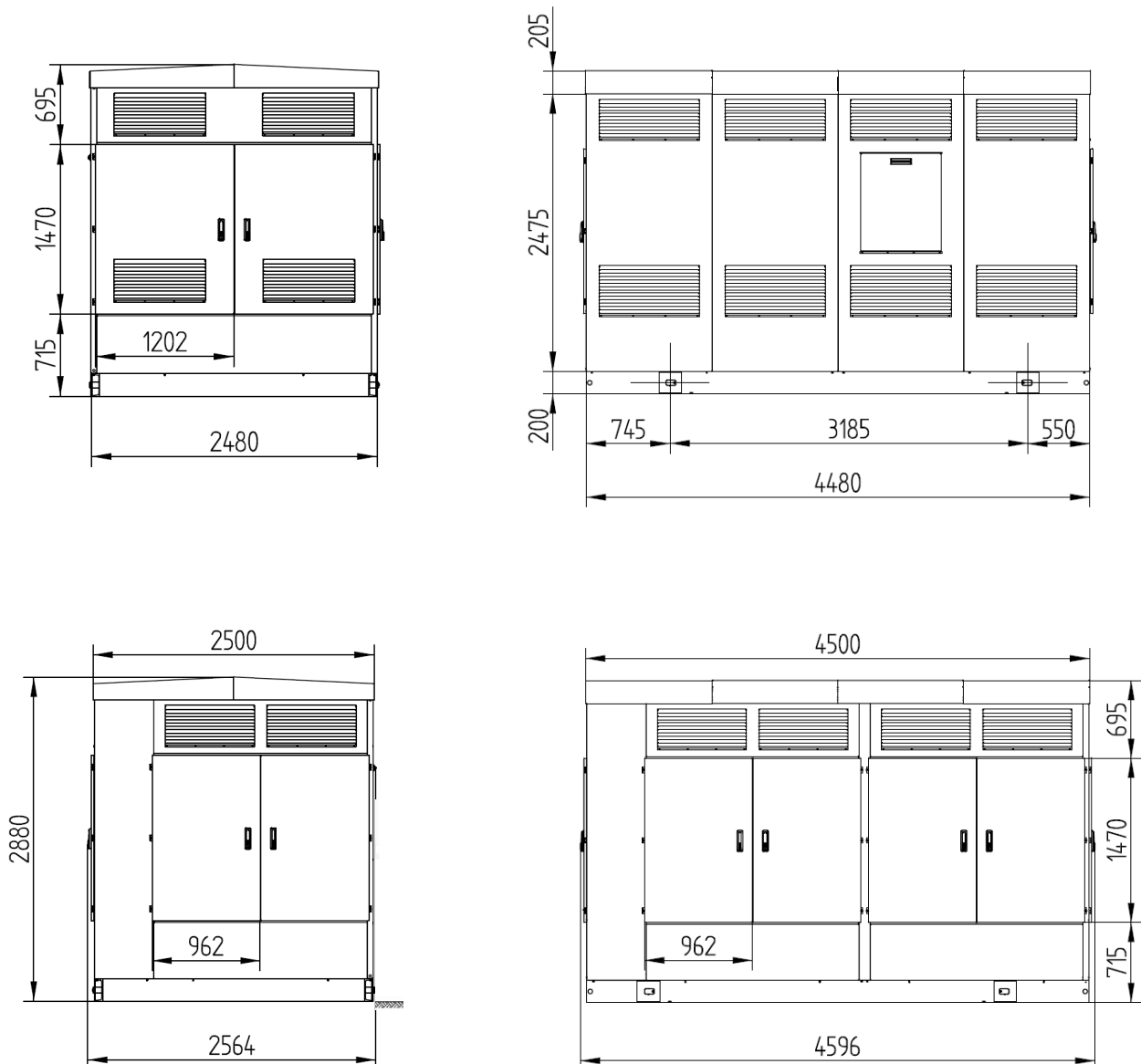
Dimension sheet
WPS2500 (tall version)



Key:

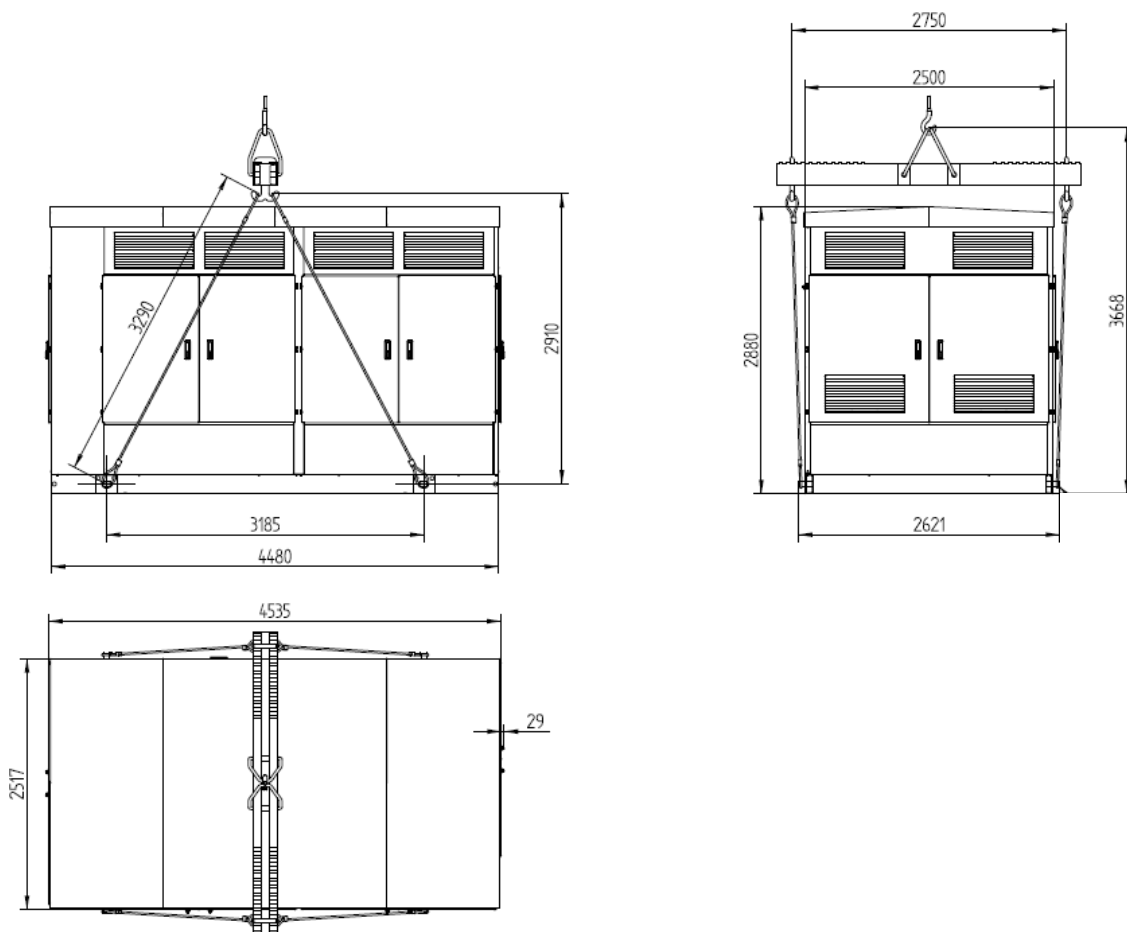
- B) Version 2 - LV-cable inlet from below
- C) MV-cable inlet from below
- E) doors with arretations at 90° and 120°
- F) Detachable puch-in plug (acces transformer)

Dimension sheet
WPS2500 (low-rise version)



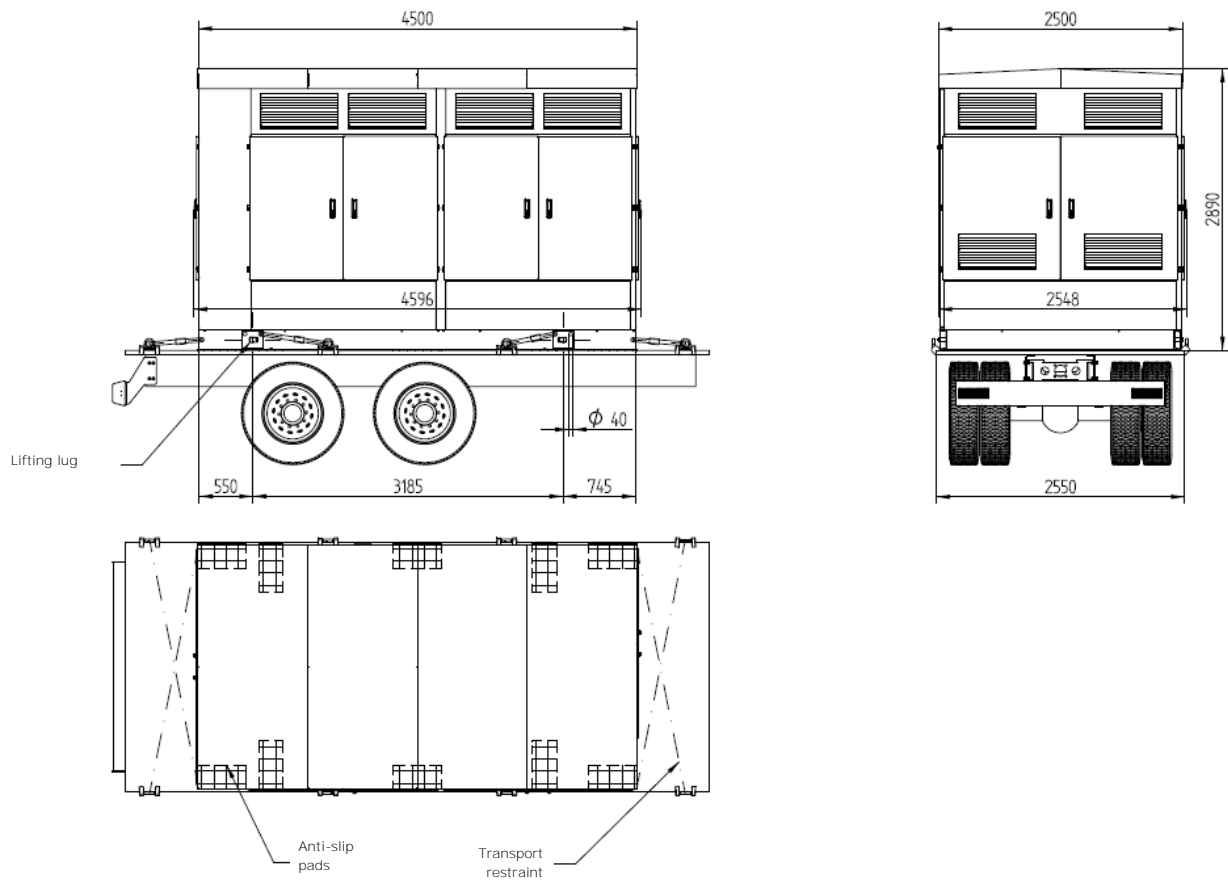
WPS2500

Lifting plan
WPS2500 (low-rise version)



WPS2500

Loading plan
WPS2500 (low-rise version)



Examples
WPS2500



Index of special types

1	Train climate-conditioning system	NBV19.29
2	Switchgear & distributing substation	NCV340 NCV300
3	Substations on vats	
4	Trailer-substations	
5	Low-resistance neutral earthing	
6	Temporary low-resistance neutral earthing	
7	Special substation	NCV207.5



Train climate-conditioning system

Lahmeyer Compactstation® **NBV19.29** can be equipped as **supply substation for train climate-conditioning systems**

Power up to 1250 kVA
Voltage up to 17.5 kV
Frequency 50 Hz and 16 2/3 Hz

Use:

Trackbed-installed electrical supply system for climate-conditioning of train coaches, connection by control columns, with integrated electronic controls

Dimensions:

Footprint 5.70 m²
Area with opened doors max. 14.60 m²
L x W x H 3010 x 2100 x 2382 mm

Weights:

Empty housing ca. 1250 kg
Total ca. 8100 kg
(approx. with DIN-transformer 1250kVA and equipment)

Design:

Housing:

Steel sheet, galvanised and powder coated, lockable doors for transformer-, LV-, control- and MV-compartment
Windows in control- and LV-compartment
Standard colour: Reseda green (RAL 6011)
other RAL-colours possible (additional charge)
With base frame, hot-dip galvanised and powder

Oil collecting pan:

Separate, concrete, under ground

Equipment:

MV-compartment:

equipped with:

Siemens Vakuuum circuit breaker
Driescher Earthing switch, 2-pole

Transformer:

Single-phase-transformers (hermetic-design)
up to max. 1250kVA, 16 2/3Hz

max. dimensions of the transformer:
L x W x H = 1900 x 1300 x 1900 mm

LV-distribution:

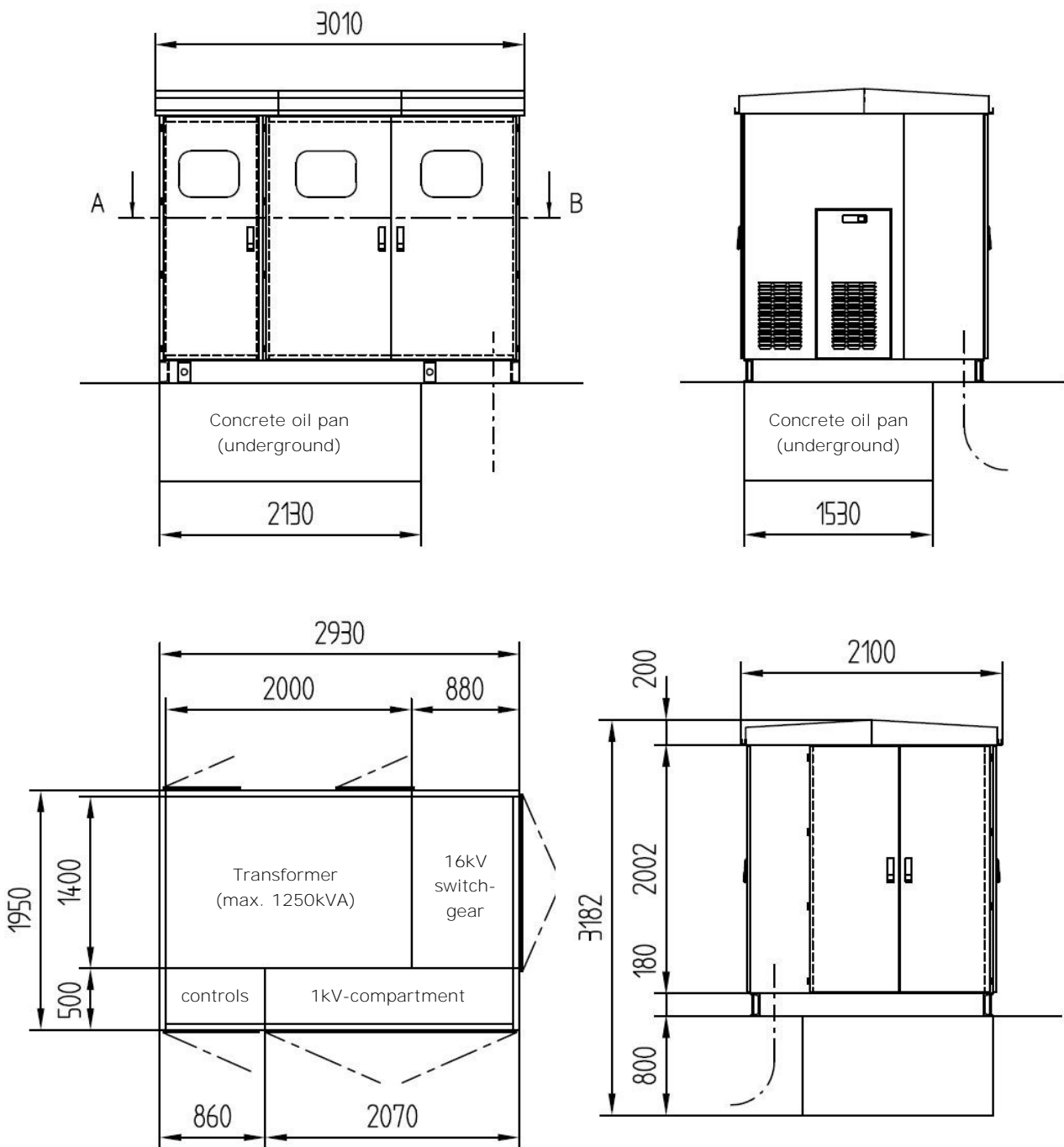
up to 10 outgoing
with 800A-contactors
with VT and branch CT's
with overcurrent protection relays

Control technique:

Electronic or relays-control

Train climate-conditioning system

Dimensions NBV19.29



Train climate-conditioning system

Example pictures
NBV19.29



Switchgear & distributing S/S NCV340/300

Lahmeyer Compactstation® **NCV340/NCV300** can be designed as **housing for switchgears and secondary systems or LV-distribution cabinet.**

Voltage	up to	24 kV
Frequency		50 Hz

Use:

In MV-grids as switchgear-substation at grid junctions or to switch a transformer apart etc., also as housing for secondary systems, distribution panels etc.

Dimensions NCV340 (NCV300):

Footprint	1.70 (1.50) m ²
Area with opened doors	2.70 (2.40) m ²
W x D x H	1750 x 1150 x 2420 mm (1450 x 1150 x 2420 mm)

Weights NCV340 (NCV300):

Empty housing	ca. 480 (390) kg
Total	ca. 950 (840) kg

(NCV340 estimated with 4-field switchgear / NCV300 with 3-field)

Design:

Housing:

Steel sheet, galvanised and powder coated lockable doors
Standard colour: pebble grey (RAL 7032)
other RAL-colours possible (additional charge)
with Lahmeyer-cable-inlets

For extraordinary cramped conditions, the narrower housing NCV300 is usable.

Equipment:

as MV-switchgear substation:

MV-compartment equipped with:

ABB	SafeRing/SafePlus	max. 4-field
Siemens	8DJH	max. 4-field

as secondary system housing:

e.g. for electronic control systems, measuring and meter boxes, monitoring equipment etc.

as LV-distribution cabinet

with LV-distribution panel(s) and smallest dry-type-transformers

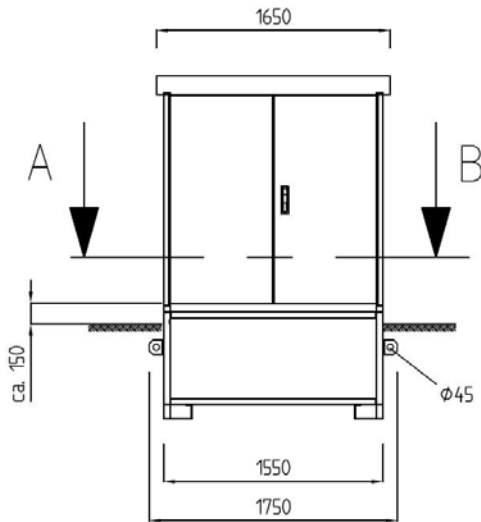
general equipment options:

lighting
hygrostatic heating
sockets

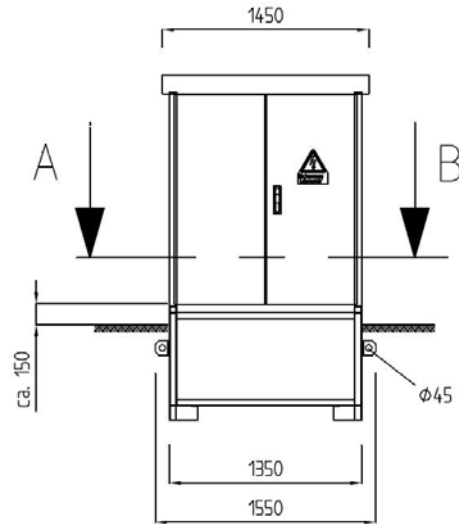


Switchgear & distributing CS NCV340/300

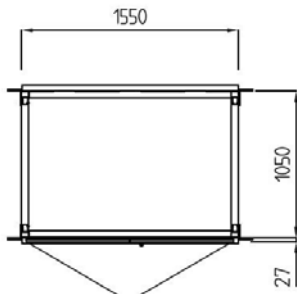
**Front view
NCV340**



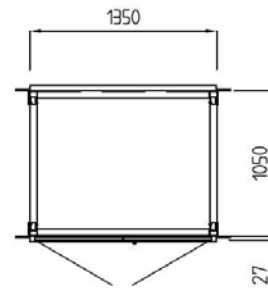
**Front view
NCV300**



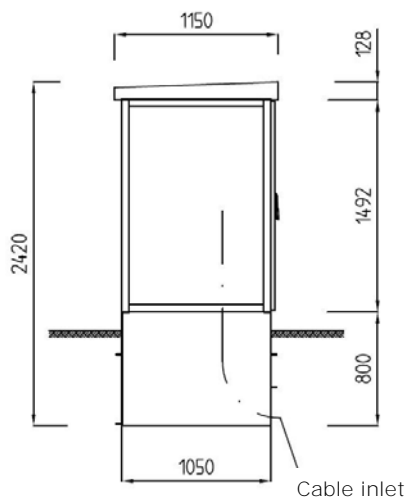
**Top view
NCV340**



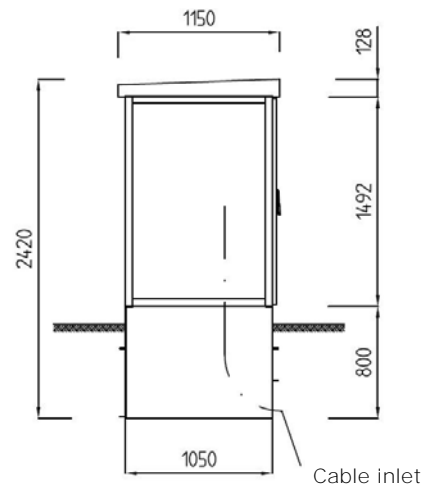
**Top view
NCV300**



**Side view
NCV340**



**Side view
NCV300**



Substations on vats

Lahmeyer Compactstations® can be mounted on cinqed or cinqed and painted **vats** for strip-mines, building sites etc.



Trailer-Substations

Lahmeyer Compactstations® can be mounted on custom-made **trailers** for emergency-stash, festival supply, building sites etc.



Low-resistance neutral earthing

Lahmeyer Compactstations® can be equipped as customised substation for **low-resistance neutral earthing**:

Voltage up to 36 kV
Frequency 50 Hz

Use:

System for low-resistance neutral earthing, to allow earth-fault-detection in MV-grids

Design:

Housing:

Applying standard types of Lahmeyer Compactstations® as LCS-E.7, NDV400, NDV1600 etc., optimised by required space

Equipment:

Neutral point connection (example):

Nominal power: 5000 kvar
Nominal voltage: 24 kV
Nominal current: 433 A

Resistance (Example):

NP-resistance
System voltage: 30 kV
Starting current: 1200 A
Duty cycle: 3.0 s
Max. temperature rise: 750 K
Resistance value: 18.0 Ohm
(in 1.0 Ohm-steps switchable)

General equipment options:

2 CT's 300/1A for protection relays
2 heatings in resistance compartment



Temporary low-resistance neutral earthing

Lahmeyer Compactstations® can be equipped as customised substation for **temporary low-resistance neutral earthing:**

Voltage up to 20 kV
Frequency 50, 16 2/3 Hz

Use:

System for temporary low-resistance neutral earthing, to allow MV-grid-earth-fault-detection

Dimensions:

Footprint 1.41 m²
Area with opened doors 2.30 m²
W x D x H 1450 x 1150 x 2420 mm

Masses:

Empty housing ca. 670 kg
Total ca. 1100 kg
(approx. with equipment)

Design:

Housing:

Steel sheet, galvanised and powder coated, lockable doors
Standard colour: Pebble grey (RAL 7032)
other RAL-colours possible (additional charge),



Equipment:

MV-compartment:

equipped with:

Siemens Vakuüm-Circuit breaker, 1-pole type 3AH5 with motor
Nominal voltage: 24 kV
Nominal current: 800 A
Short circuit current: 16 kA

Resistance:

NP-resistance
System voltage: 20 kV
Starting current: 2000 A
Duty cycle: 0.5 s
Idle time: <10 min
(after 100% load)
Resistance value: 6.0 Ohm
(in 1.0 Ohm-steps switchable)

General equipment options:

- 1 current transformer 1000/1A
- 2 heatings in resistance compartment
- 1 heating in control compartment





Special substation NCV207.5

Lahmeyer Compactstation® **NCV207.5**
is suitable for transformer with parameters:

Power up to 630 kVA
Voltage 12 kV and 24 kV

Use:

Grid-, Customer- or connection substation

Dimensions:

Footprint 2.80 m²
Area with opened doors 5.40 m²
L x W x H 2374 x 1370 x 2208 mm

Weights:

Empty housing ca. 710 kg
Total ca. 3200 kg
(approx. with DIN-transformer 630kVA and equipment)

Design:

Housing:

Steel sheet, galvanised and powder coated,
Transformer-compartment accessible by push-in
plug, lockable doors for MV- and LV-
compartment
Standard colour: Pebble grey (RAL 7032)
other RAL-colours possible (additional charge),
Graffiti-protection possible

Base:

with integrated oil collecting pan
Steel sheet, hot-dip galvanised and double
powder coated
suitable for Hauff-gaskets, e.g. type HSI 150

Equipment:

MV-compartment:

SF6-insulated MV-switchgear max.:
Siemens 8DJH 3-field

Transformer:

Distribution transformer max. 800kVA (SGB)
Cast-resin transformer max. 400kVA

max. dimensions transformer:
L x W x H = 1240 x 840 x 1440 mm

LV-distribution:

LV-fuse switch 630 / 1250 A
or LV-strip type fuse disconnecter 910 A
or MCCB up to 1250 A

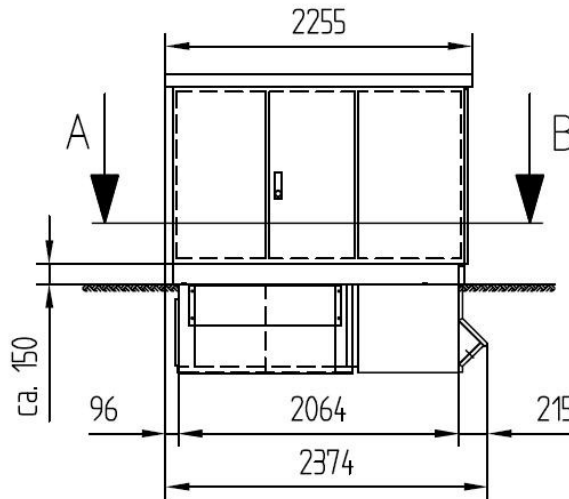
max. 9 outgoing
LV-strip type fuseways or
LV-strip type fuse disconnecter size 1/2/3

General equipment options:

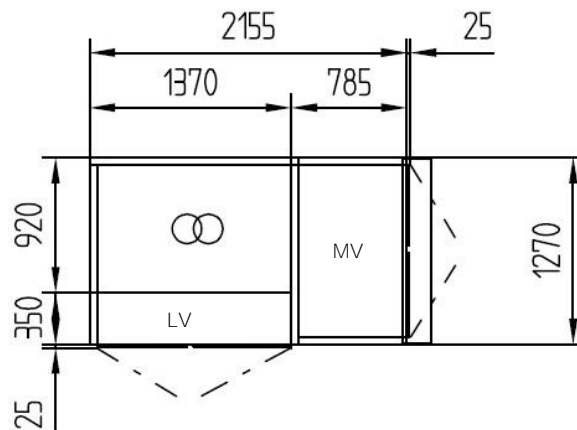
synchronisation, fuses
current metering
voltage metering
multimeters
lighting
sockets
earthing equipment

Special substation NCV207.5

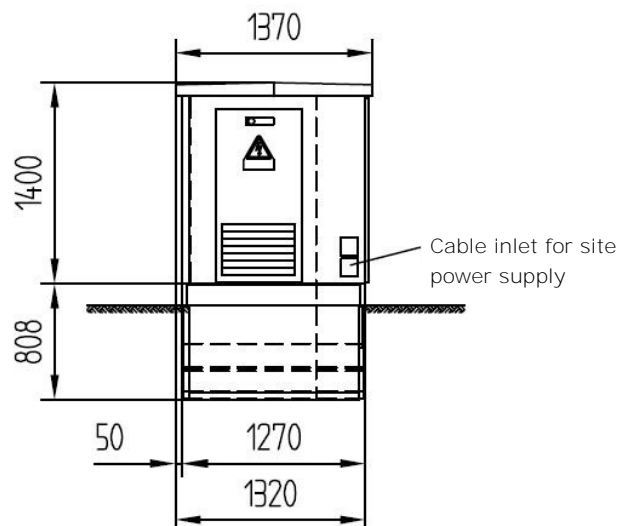
Front view
NCV207.5



Top view
NCV207.5



Side view
NCV207.5



Rental substations

Lahmeyer Compactstations® are available to hire for negotiable time periods.

Assortment:

- Compactstations in stock
- Customised manufactured
- Hire-purchase (after rental period)

Characteristics:

- Short-term availability
- Applicable for ground-level installation
- remarkable versatility
- Small footprint
- IAC-tested

Field of application:

- Site power supply
- Emergency supply, in case of failure to avoid consequential damages and costs
- To bypass delivery times
- Long-time-hire to avoid high investment costs

Available substationtypes:

- LCS-E, also on trailer
- NDV400
- NDV1200 - NDV2600
- WPS2500
- Special types

All information to these substations can be found in the corresponding chapters.

Rental costs:

Rental period	Price per day*
1 day	starting 23.00€
starting 1 month	starting 20.00€
starting 1 year	starting 14.00€
starting 3 years	starting 12.50€

* All prices as hire per day (net)

* Price plus logistics

Rental substations

e.g. LCS-E.7



e.g. NDV400



**e.g. LCS-E.7
on trailer**



Renewable energy

Lahmeyer-Compactstations®, especially types **NDV400**, **NDV1200-2600** and **WPS2500**, are ideally suited for connection of renewable energy generating facilities, such as wind turbines, photovoltaic installations or natural gas plants.

Our Compactstations can be equipped as transformer substation or grid-connection point, with several metering units, telemetric or telecontrol devices, parc controls, reactive power compensation etc.

Example - WPS2500 for wind power stations

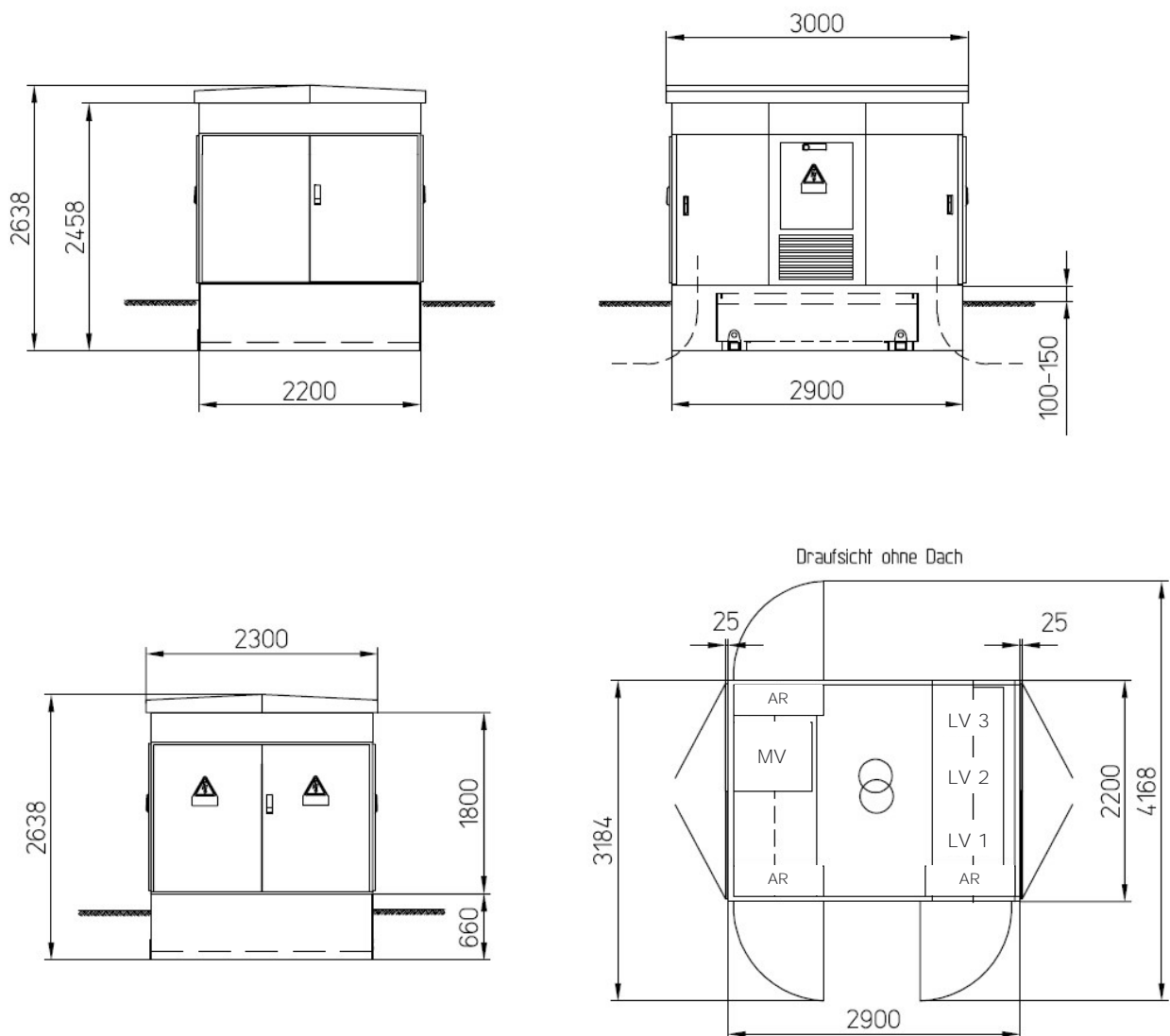
Transformer power up to 4.0MVA at 36.0kV
(picture with storm protection of vents, for exposed areas)



Renewable energy

Example - NDV2500 with 3 additional compartments

f.i. usable for a natural gas plant with three metered LV-distribution panels and meter boxes

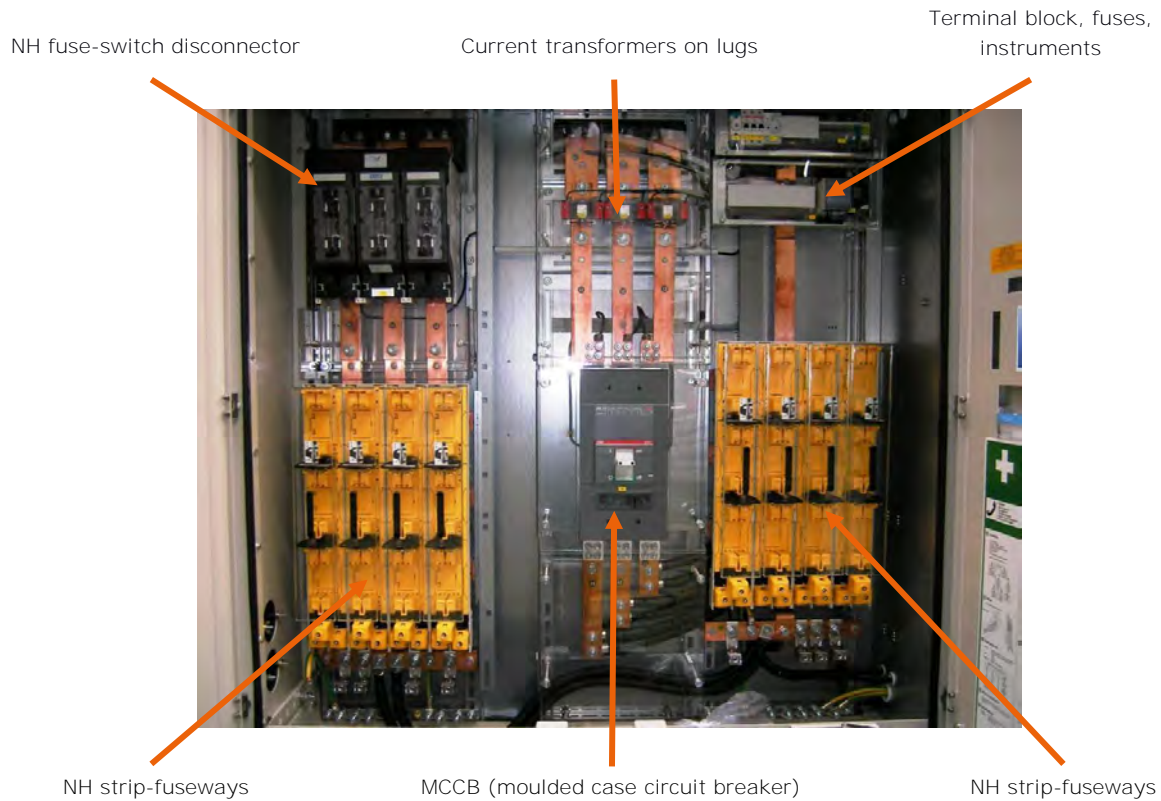


MC = measuring compartment

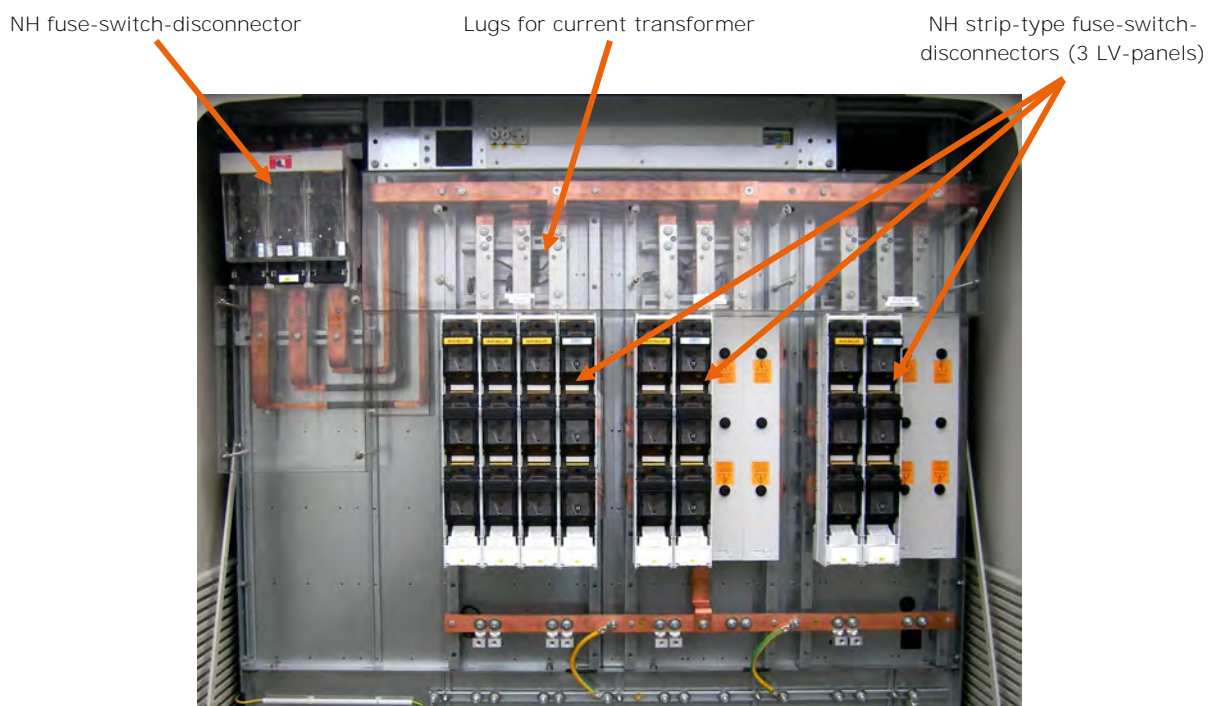
AC = Additional room

Renewable energy

Example - LV-distribution panel NDV400

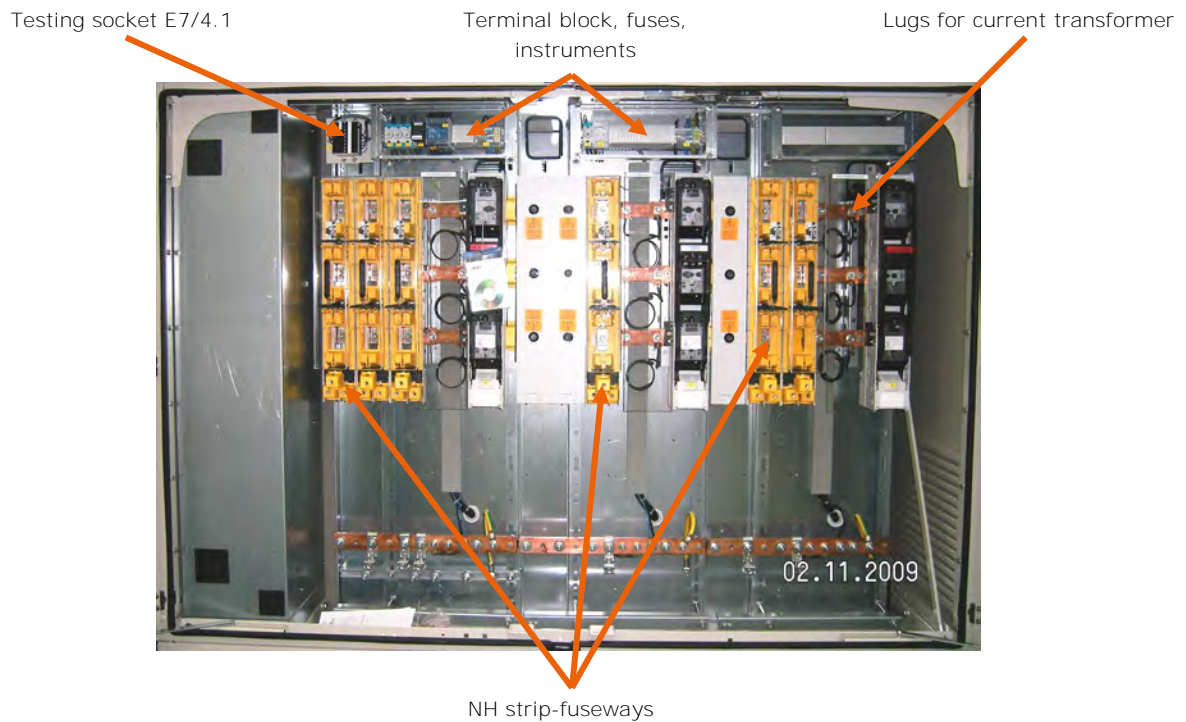


Example - LV-distribution panel NDV1600

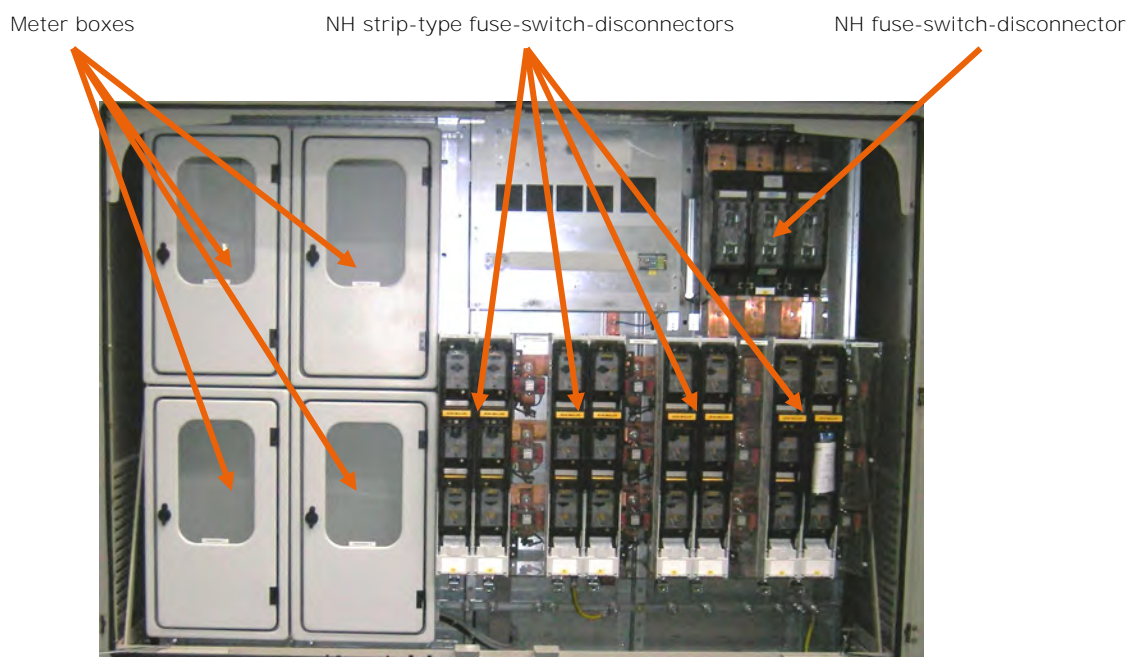


Renewable energy

Example - LV-distribution panel NDV1600



Example - LV-distribution panel NDV1600



Renewable energy

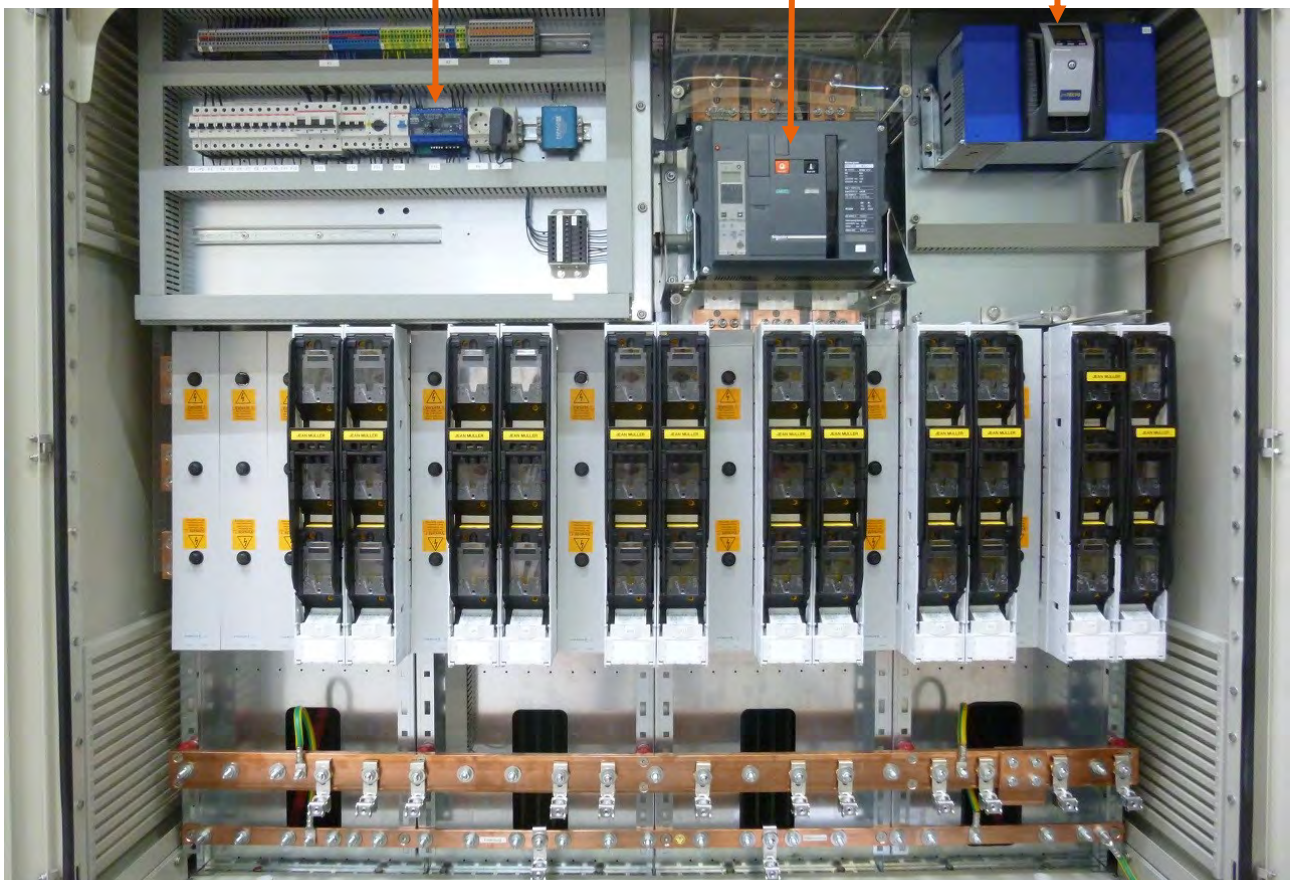
Example - LV-distribution panel NDV2500

4000A-MCCB (moulded case circuit breaker)

make: Schneider Electric

Over-/under-voltage/-frequency protection relay)

UPS (for protection relay)

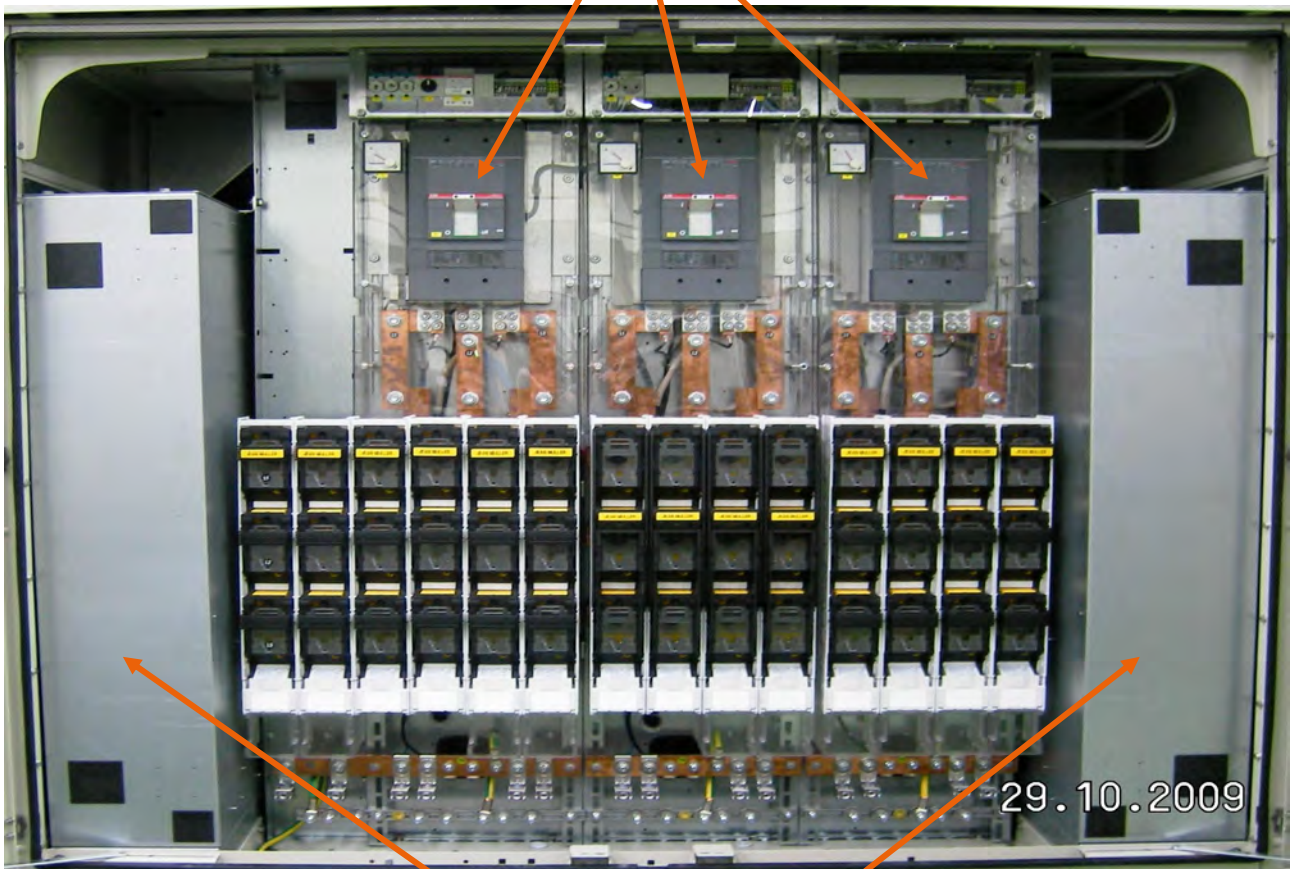


Renewable energy

Example - LV-distribution panel NDV2500

MCCB (moulded case circuit breaker)

make: ABB

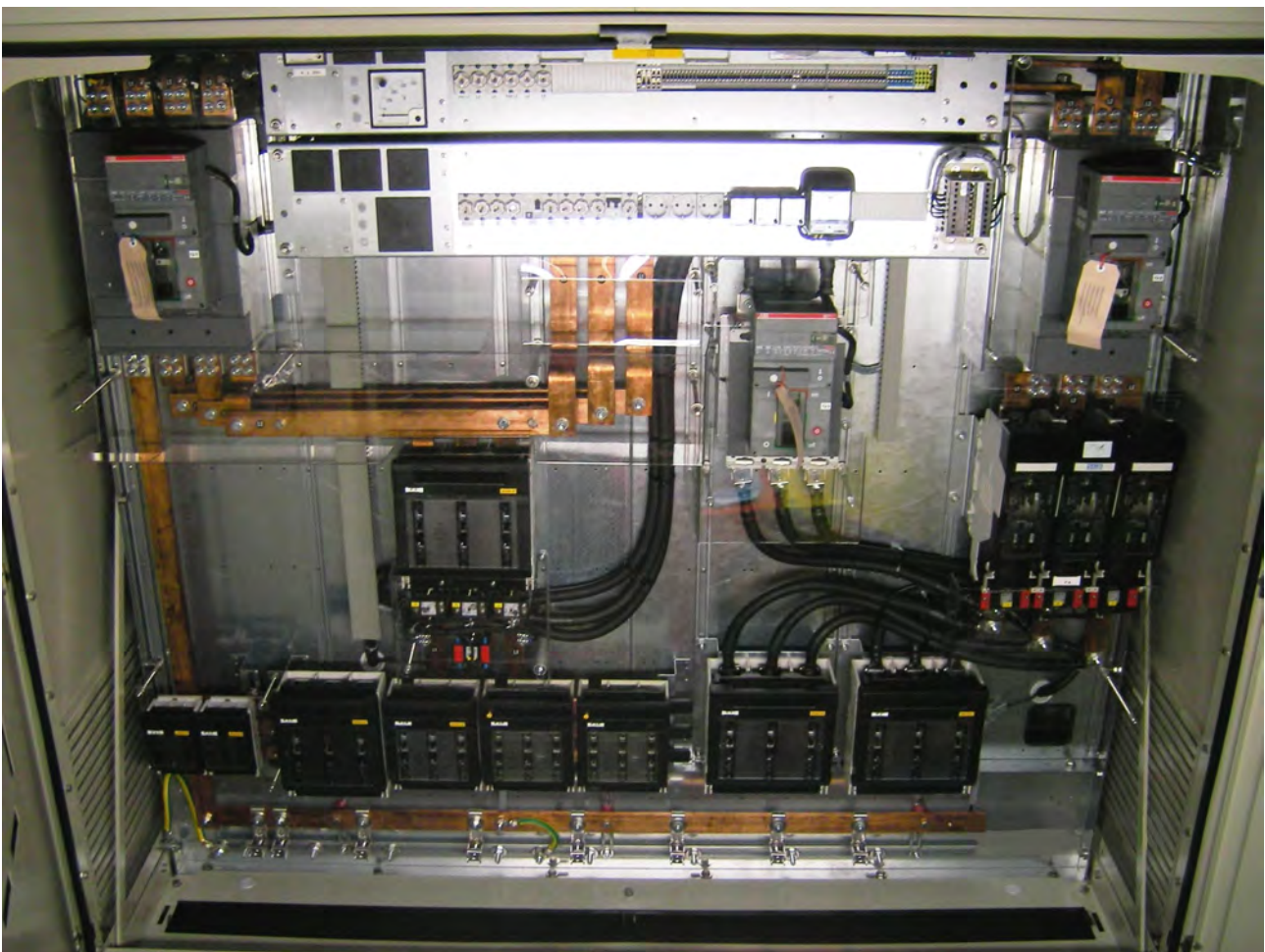


Additional compartments
(doors on longside of substation)

Renewable energy

Example - LV-distribution panel NDV2500

for isolated operation facilities (island mode) in case of lacking grid voltage,
with automatic mode switch



MV-measuring compartment

The Lahmeyer **MV-measuring compartment** provides

- Low price
- Safety
- Proven IAC-test in accordance to IEC 62271-200:2011 type A, 20kA (1s)

Use:

- For mounting of MV-current- and MV-voltage-transformers up to 20kV, acc. to DIN 42600 – 8/9 (also big size)
- Use in existing facilities
- Use in Lahmeyer Compactstations® (IAC-tested in acc. to IEC 62271-202:2011 type AB)

Available:

- As empty compartment
- Equipped with customer-supplied CT's/VT's
- Prepared for later mounting of CT's/VT's
- Completed, incl. CT's/VT's



IAC-test

Dimensions:

W x D x H = 900 x 600 x 1400 mm

Empty weight:

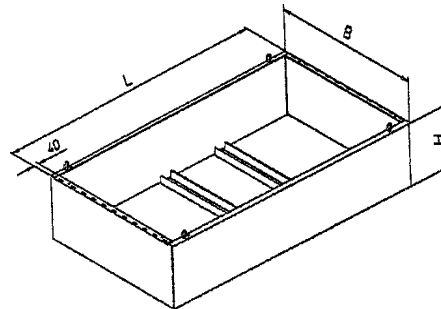
approx. 130 kg

Oil collecting pans (OCP)

SBG Neumark provides following types of oil collecting pans:

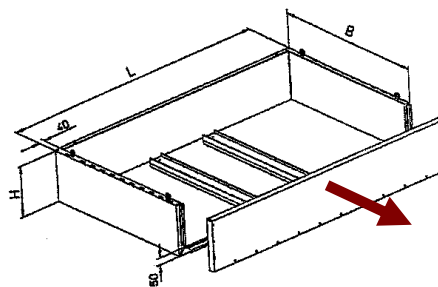
Closed versions:

TOA-G 03
TOA-G 04



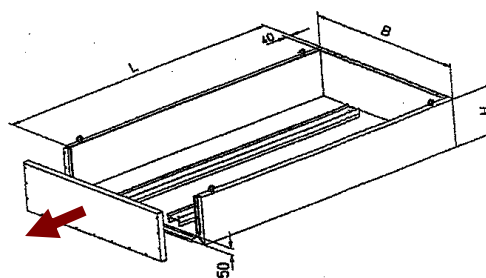
Longside-openable versions:

TOA-OL 01
TOA-OL 02
TOA-OL 03
TOA-OL 04
TOA-OL 05



Frontside-openable versions:

TOA-OS 01
TOA-OS 02
TOA-OS 03
TOA-OS 04
TOA-OS 05



TOA-G 03

Hot-dip galvanised oil collecting pan type TOA-G 03, design-no. 218 5553, closed version, suitable for retrofit of transformers in substations without oil-tight pan or basement.

The OCPs apply to all regulations of the water regime law of the Federal Republic of Germany to protect the environment.

Features:

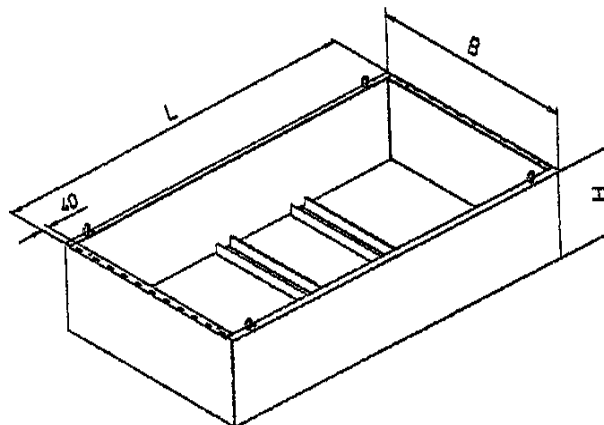
- oil-tight
- resistant against transformer oil
- made of S235JR-material, hot-dip galvanised, material thickness 4mm
- resistant against corrosion (hot-dip galvanised)
- Tightness-, design- and construction-test
- verified welding quality (fabrication by qualified welders)
- hot-dip galvanised mounting rails for transformers

Design:

The hot-dip galvanised OCPs of series TOA-G have all-around fixed (closed) sidewalls. The also hot-dip galvanised U-profile mounting rails are designed for crossways mounting. They are delivered loose and can be adjusted according to the track width of the transformer wheels or leg irons.

Dimensions:

Length	mm	1700
Width	mm	1000
Height	mm	400
Mass	kg	161
Volume	dm ³	650



Remark:

Empty mass, with mounting rails.

Volume with 10% safety factor, transformer not included.

TOA-G 04

Hot-dip galvanised oil collecting pan type TOA-G 04, design-no. 218 5561, closed version, suitable for retrofit of transformers in substations without oil-tight pan or basement.

The OCPs apply to all regulations of the water regime law of the Federal Republic of Germany to protect the environment.

Features:

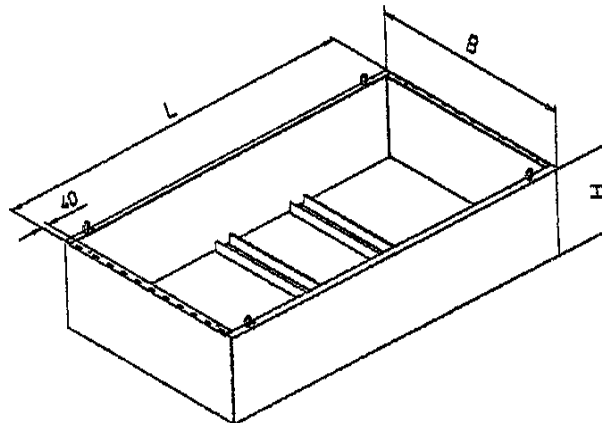
- oil-tight
- resistant against transformer oil
- made of S235JR-material, hot-dip galvanised, material thickness 4mm
- resistant against corrosion (hot-dip galvanised)
- Tightness-, design- and construction-test
- verified welding quality (fabrication by qualified welders)
- hot-dip galvanised mounting rails for transformers

Design:

The hot-dip galvanised OCPs of series TOA-G have all-around fixed (closed) sidewalls. The also hot-dip galvanised U-profile mounting rails are designed for crossways mounting. They are delivered loose and can be adjusted according to the track width of the transformer wheels or leg irons.

Dimensions:

Length	mm	1900
Width	mm	1100
Height	mm	400
Mass	kg	238
Volume	dm ³	800



Remark:

Empty mass, with mounting rails.

Volume with 10% safety factor, transformer not included.

TOA-OL 01

Hot-dip galvanised oil collecting pan type TOA-OL 01, design-no. 218 5613, longside-openable version, suitable for retrofit of transformers in substations without oil-tight pan or basement. The OCPs apply to all regulations of the water regime law of the Federal Republic of Germany to protect the environment.

Features:

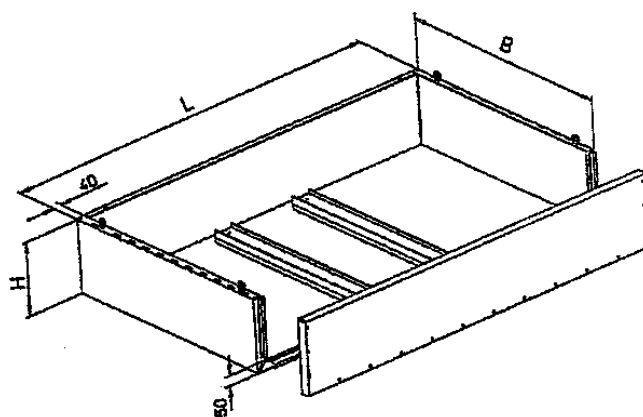
- oil-tight
- resistant against transformer oil
- made of S235JR-material, hot-dip galvanised, material thickness 4mm
- resistant against corrosion (hot-dip galvanised)
- Tightness-, design- and construction-test
- verified welding quality (fabrication by qualified welders)
- hot-dip galvanised mounting rails for transformers

Design:

The hot-dip galvanised OCPs of series TOA-OL have three fixed (closed) sidewalls and one detachable long side element. This is equipped with an oil-proof gasket and screwed. The bottom sealing edge of the detachable wall element and the tread of the mounting rails are 50mm above ground. The also hot-dip galvanised U-profile mounting rails are designed for crossways mounting. They are delivered loose and can be adjusted according to the track width of the transformer wheels or leg irons.

Dimensions:

Length	mm	1300
Width	mm	900
Height	mm	300
Mass	kg	123
Volume	dm ³	330



Remark:

Empty mass, with mounting rails.

Volume with 10% safety factor, transformer not included.

TOA-OL 02

Hot-dip galvanised oil collecting pan type TOA-OL 02, design-no. 218 5620, longside-openable version, suitable for retrofit of transformers in substations without oil-tight pan or basement. The OCPs apply to all regulations of the water regime law of the Federal Republic of Germany to protect the environment.

Features:

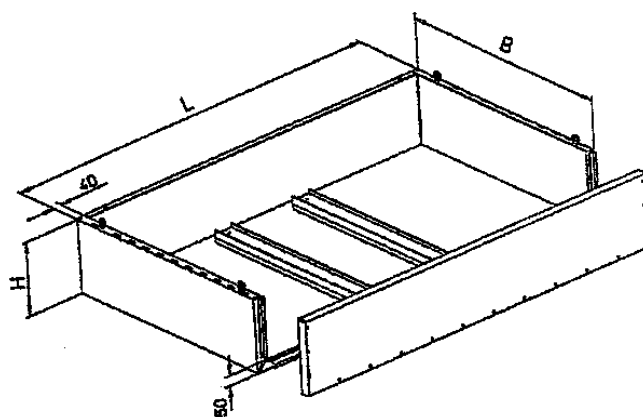
- oil-tight
- resistant against transformer oil
- made of S235JR-material, hot-dip galvanised, material thickness 4mm
- resistant against corrosion (hot-dip galvanised)
- Tightness-, design- and construction-test
- verified welding quality (fabrication by qualified welders)
- hot-dip galvanised mounting rails for transformers

Design:

The hot-dip galvanised OCPs of series TOA-OL have three fixed (closed) sidewalls and one detachable long side element. This is equipped with an oil-proof gasket and screwed. The bottom sealing edge of the detachable wall element and the tread of the mounting rails are 50mm above ground. The also hot-dip galvanised U-profile mounting rails are designed for crossways mounting. They are delivered loose and can be adjusted according to the track width of the transformer wheels or leg irons.

Dimensions:

Length	mm	1600
Width	mm	1000
Height	mm	300
Mass	kg	143
Volume	dm ³	450



Remark:

Empty mass, with mounting rails.

Volume with 10% safety factor, transformer not included.

TOA-OL 03

Hot-dip galvanised oil collecting pan type TOA-OL 03, design-no. 218 5638, longside-openable version, suitable for retrofit of transformers in substations without oil-tight pan or basement. The OCPs apply to all regulations of the water regime law of the Federal Republic of Germany to protect the environment.

Features:

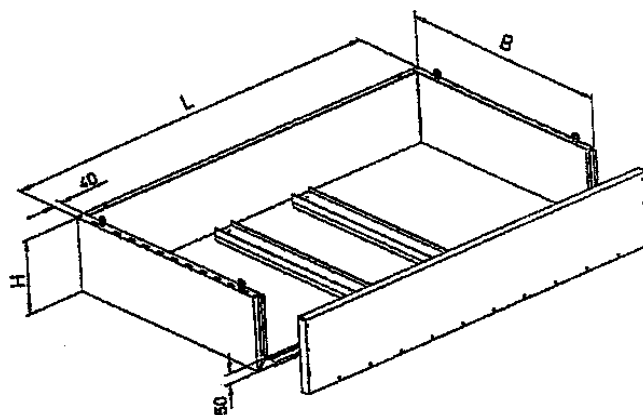
- oil-tight
- resistant against transformer oil
- made of S235JR-material, hot-dip galvanised, material thickness 4mm
- resistant against corrosion (hot-dip galvanised)
- Tightness-, design- and construction-test
- verified welding quality (fabrication by qualified welders)
- hot-dip galvanised mounting rails for transformers

Design:

The hot-dip galvanised OCPs of series TOA-OL have three fixed (closed) sidewalls and one detachable long side element. This is equipped with an oil-proof gasket and screwed. The bottom sealing edge of the detachable wall element and the tread of the mounting rails are 50mm above ground. The also hot-dip galvanised U-profile mounting rails are designed for crossways mounting. They are delivered loose and can be adjusted according to the track width of the transformer wheels or leg irons.

Dimensions:

Length	mm	1700
Width	mm	1000
Height	mm	400
Mass	kg	169
Volume	dm ³	650



Remark:

Empty mass, with mounting rails.

Volume with 10% safety factor, transformer not included.

TOA-OL 04

Hot-dip galvanised oil collecting pan type TOA-OL 04, design-no. 218 5645, longside-openable version, suitable for retrofit of transformers in substations without oil-tight pan or basement. The OCPs apply to all regulations of the water regime law of the Federal Republic of Germany to protect the environment.

Features:

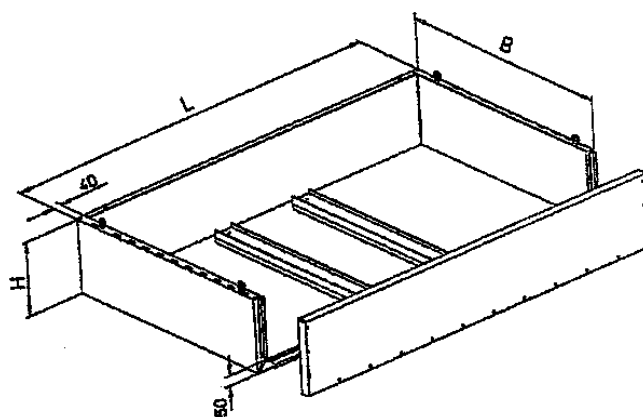
- oil-tight
- resistant against transformer oil
- made of S235JR-material, hot-dip galvanised, material thickness 4mm
- resistant against corrosion (hot-dip galvanised)
- Tightness-, design- and construction-test
- verified welding quality (fabrication by qualified welders)
- hot-dip galvanised mounting rails for transformers

Design:

The hot-dip galvanised OCPs of series TOA-OL have three fixed (closed) sidewalls and one detachable long side element. This is equipped with an oil-proof gasket and screwed. The bottom sealing edge of the detachable wall element and the tread of the mounting rails are 50mm above ground. The also hot-dip galvanised U-profile mounting rails are designed for crossways mounting. They are delivered loose and can be adjusted according to the track width of the transformer wheels or leg irons.

Dimensions:

Length	mm	1900
Width	mm	1100
Height	mm	400
Mass	kg	202
Volume	dm ³	800



Remark:

Empty mass, with mounting rails.

Volume with 10% safety factor, transformer not included.

TOA-OL 05

Hot-dip galvanised oil collecting pan type TOA-OL 05, design-no. 268 1184, longside-openable version, suitable for retrofit of transformers in substations without oil-tight pan or basement. The OCPs apply to all regulations of the water regime law of the Federal Republic of Germany to protect the environment.

Features:

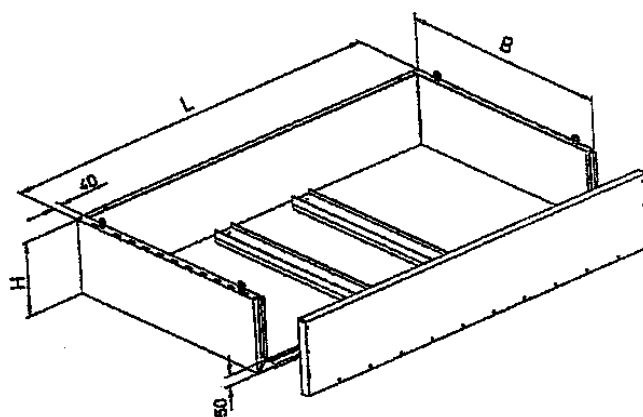
- oil-tight
- resistant against transformer oil
- made of S235JR-material, hot-dip galvanised, material thickness 4mm
- resistant against corrosion (hot-dip galvanised)
- Tightness-, design- and construction-test
- verified welding quality (fabrication by qualified welders)
- hot-dip galvanised mounting rails for transformers

Design:

The hot-dip galvanised OCPs of series TOA-OL have three fixed (closed) sidewalls and one detachable long side element. This is equipped with an oil-proof gasket and screwed. The bottom sealing edge of the detachable wall element and the tread of the mounting rails are 50mm above ground. The also hot-dip galvanised U-profile mounting rails are designed for crossways mounting. They are delivered loose and can be adjusted according to the track width of the transformer wheels or leg irons.

Dimensions:

Length	mm	2200
Width	mm	1300
Height	mm	400
Mass	kg	211
Volume	dm ³	1000



Remark:

Empty mass, with mounting rails.

Volume with 10% safety factor, transformer not included.

TOA-OS 01

Hot-dip galvanised oil collecting pan type TOA-OS 01, design-no. 218 5578, frontside-openable version, suitable for retrofit of transformers in substations without oil-tight pan or basement. The OCPs apply to all regulations of the water regime law of the Federal Republic of Germany to protect the environment.

Features:

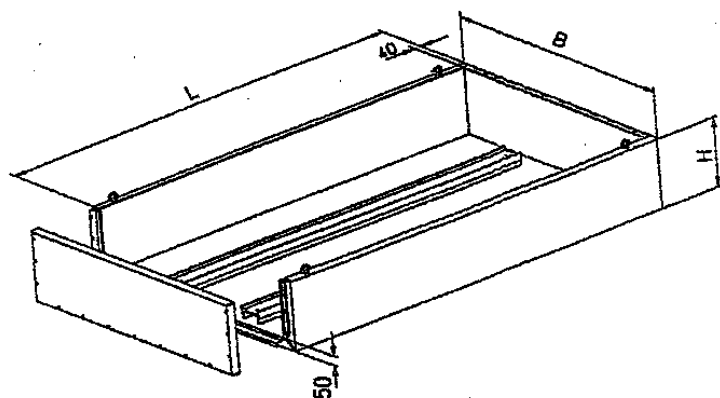
- oil-tight
- resistant against transformer oil
- made of S235JR-material, hot-dip galvanised, material thickness 4mm
- resistant against corrosion (hot-dip galvanised)
- Tightness-, design- and construction-test
- verified welding quality (fabrication by qualified welders)
- hot-dip galvanised mounting rails for transformers

Design:

The hot-dip galvanised OCPs of series TOA-OS have three fixed (closed) sidewalls and one detachable front side element. This is equipped with an oil-proof gasket and screwed. The bottom sealing edge of the detachable wall element and the tread of the mounting rails are 50mm above ground. The also hot-dip galvanised U-profile mounting rails are designed for crossways mounting. They are delivered loose and can be adjusted according to the track width of the transformer wheels or leg irons.

Dimensions:

Length	mm	1300
Width	mm	900
Height	mm	300
Mass	kg	133
Volume	dm ³	330



Remark:

Empty mass, with mounting rails.

Volume with 10% safety factor, transformer not included.

TOA-OS 02

Hot-dip galvanised oil collecting pan type TOA-OS 02, design-no. 218 5586, frontside-openable version, suitable for retrofit of transformers in substations without oil-tight pan or basement. The OCPs apply to all regulations of the water regime law of the Federal Republic of Germany to protect the environment.

Features:

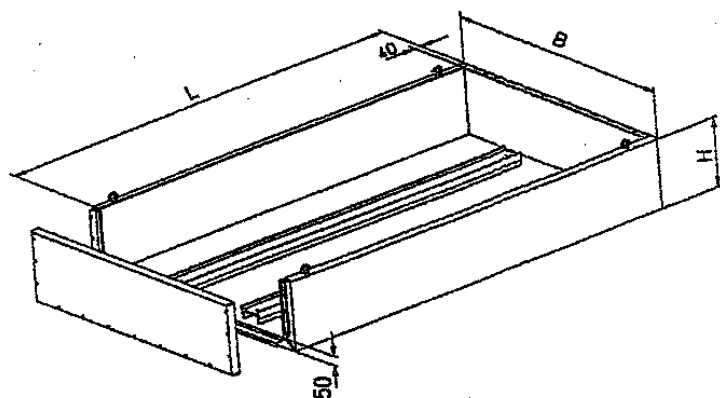
- oil-tight
- resistant against transformer oil
- made of S235JR-material, hot-dip galvanised, material thickness 4mm
- resistant against corrosion (hot-dip galvanised)
- Tightness-, design- and construction-test
- verified welding quality (fabrication by qualified welders)
- hot-dip galvanised mounting rails for transformers

Design:

The hot-dip galvanised OCPs of series TOA-OS have three fixed (closed) sidewalls and one detachable front side element. This is equipped with an oil-proof gasket and screwed. The bottom sealing edge of the detachable wall element and the tread of the mounting rails are 50mm above ground. The also hot-dip galvanised U-profile mounting rails are designed for crossways mounting. They are delivered loose and can be adjusted according to the track width of the transformer wheels or leg irons.

Dimensions:

Length	mm	1600
Width	mm	1000
Height	mm	300
Mass	kg	155
Volume	dm ³	450



Remark:

Empty mass, with mounting rails.
 Volume with 10% safety factor, transformer not included.

TOA-OS 03

Hot-dip galvanised oil collecting pan type TOA-OS 03, design-no. 218 5593, frontside-openable version, suitable for retrofit of transformers in substations without oil-tight pan or basement. The OCPs apply to all regulations of the water regime law of the Federal Republic of Germany to protect the environment.

Features:

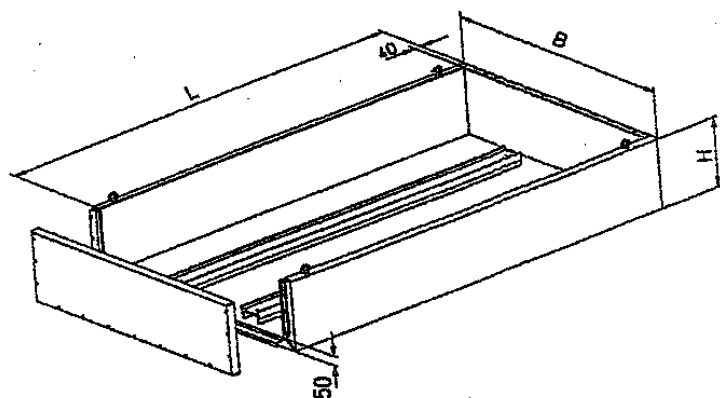
- oil-tight
- resistant against transformer oil
- made of S235JR-material, hot-dip galvanised, material thickness 4mm
- resistant against corrosion (hot-dip galvanised)
- Tightness-, design- and construction-test
- verified welding quality (fabrication by qualified welders)
- hot-dip galvanised mounting rails for transformers

Design:

The hot-dip galvanised OCPs of series TOA-OS have three fixed (closed) sidewalls and one detachable front side element. This is equipped with an oil-proof gasket and screwed. The bottom sealing edge of the detachable wall element and the tread of the mounting rails are 50mm above ground. The also hot-dip galvanised U-profile mounting rails are designed for crossways mounting. They are delivered loose and can be adjusted according to the track width of the transformer wheels or leg irons.

Dimensions:

Length	mm	1700
Width	mm	1000
Height	mm	400
Mass	kg	180
Volume	dm ³	650



Remark:

Empty mass, with mounting rails.
 Volume with 10% safety factor, transformer not included.

TOA-OS 04

Hot-dip galvanised oil collecting pan type TOA-OS 04, design-no. 218 5605, frontside-openable version, suitable for retrofit of transformers in substations without oil-tight pan or basement. The OCPs apply to all regulations of the water regime law of the Federal Republic of Germany to protect the environment.

Features:

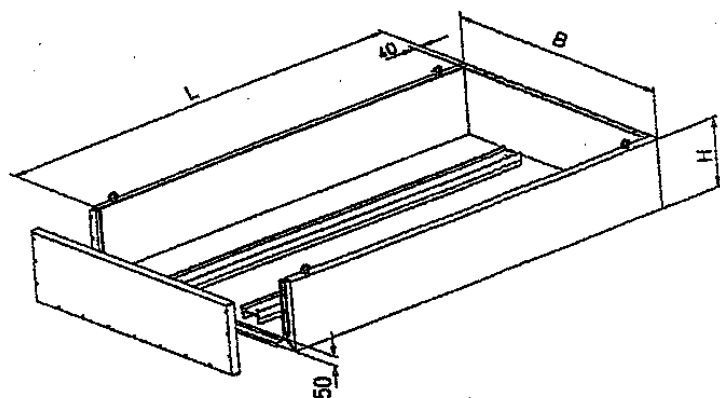
- oil-tight
- resistant against transformer oil
- made of S235JR-material, hot-dip galvanised, material thickness 4mm
- resistant against corrosion (hot-dip galvanised)
- Tightness-, design- and construction-test
- verified welding quality (fabrication by qualified welders)
- hot-dip galvanised mounting rails for transformers

Design:

The hot-dip galvanised OCPs of series TOA-OS have three fixed (closed) sidewalls and one detachable front side element. This is equipped with an oil-proof gasket and screwed. The bottom sealing edge of the detachable wall element and the tread of the mounting rails are 50mm above ground. The also hot-dip galvanised U-profile mounting rails are designed for crossways mounting. They are delivered loose and can be adjusted according to the track width of the transformer wheels or leg irons.

Dimensions:

Length	mm	1900
Width	mm	1100
Height	mm	400
Mass	kg	234
Volume	dm ³	800



Remark:

Empty mass, with mounting rails.

Volume with 10% safety factor, transformer not included.

TOA-OS 05

Hot-dip galvanised oil collecting pan type TOA-OS 05, design-no. 267 7922, frontside-openable version, suitable for retrofit of transformers in substations without oil-tight pan or basement. The OCPs apply to all regulations of the water regime law of the Federal Republic of Germany to protect the environment.

Features:

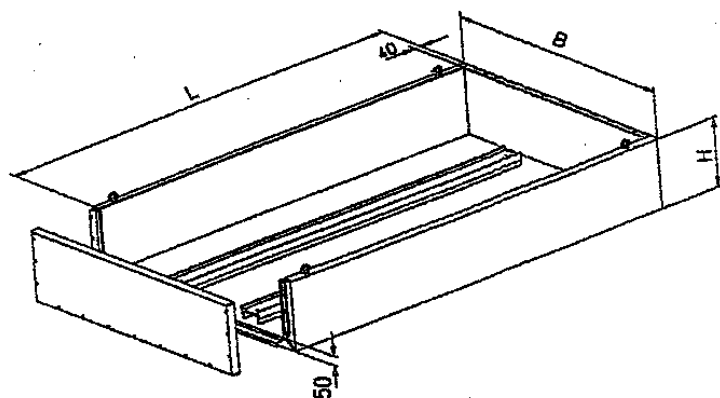
- oil-tight
- resistant against transformer oil
- made of S235JR-material, hot-dip galvanised, material thickness 4mm
- resistant against corrosion (hot-dip galvanised)
- Tightness-, design- and construction-test
- verified welding quality (fabrication by qualified welders)
- hot-dip galvanised mounting rails for transformers

Design:

The hot-dip galvanised OCPs of series TOA-OS have three fixed (closed) sidewalls and one detachable front side element. This is equipped with an oil-proof gasket and screwed. The bottom sealing edge of the detachable wall element and the tread of the mounting rails are 50mm above ground. The also hot-dip galvanised U-profile mounting rails are designed for crossways mounting. They are delivered loose and can be adjusted according to the track width of the transformer wheels or leg irons.

Dimensions:

Length	mm	2200
Width	mm	1300
Height	mm	400
Mass	kg	247
Volume	dm ³	1000



Remark:

Empty mass, with mounting rails.

Volume with 10% safety factor, transformer not included.

REFERENCE LIST

LAHMEYER COMPACTSTATIONS®

**SÄCHSISCH-BAYERISCHE
STARKSTROM-GERÄTEBAU GMBH**



VOLTAGE:

12 kV
24 kV
36 kV

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BEW Bergische Energie- und Wasser GmbH
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BMTI Baumaschinentechnik
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CENTRUM BAU GmbH & Co. KG
Cofely Deutschland GmbH
Cosmoenergy GmbH & Co.KG
Currenta GmbH & Co. OHG
DEG Deutsche Elektro-Gruppe GmbH
Dessau-Electric GmbH
Dessauer Versorgungs- und Verkehrsgesellschaft
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E.DIS AG
E.ON Thüringer Energie AG
eab Elektroanlagenbau
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Dessau
Dessau
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envia Therm GmbH	Halle
ERN Elektrosysteme	Simmern
Evonik Services GmbH	Saarbrücken
exico GmbH	Altenkunstadt
Exim Starkstromanlagen e. Kfm.	Berlin
FEAG	Neuss
GA Energieanlagenbau Nord GmbH	Erfurt
GA Energieanlagenbau Süd GmbH	Rutesheim
GA-tec Gebäude-und Anlagentechnik GmbH	Essen
Geier Starkstromtechnik GmbH	Dillenburg-Oberscheld
GETEC heat & power AG	Magdeburg
Goldbeck Süd GmbH	Stuttgart
H. Hron GmbH	Allstedt
Hell GmbH & Co. KG	Krefeld
HOCK Photovoltaik	Großostheim
Hüttinger Elektroanlagen GmbH	Berlin-Karlshorst
IBEEA GmbH & Co.KG	Dermbach
IDEEMASUN energy GmbH	Wallerfing
IES Ingenieurbüro für Elektro- und Solarplanung GmbH	Dillingen
InfraServ GmbH & Co. Höchst KG	Frankfurt
Ing.-Büro Schmitz	Leverkusen
Innecken Elektroanlagen GmbH	Euskirchen
ITB Office Nürnberg	Bocholt
Juno Solar GmbH & Co. KG	Werdau
Juwi Solar GmbH	Wörrstadt
KACO new energy GmbH	Neckarsulm
Kerbl GmbH & Co.KG	Petersberg
KEW Kommunale Energie- und Wasserversorgung AG	Neunkirchen
Kirchner Solar Group GmbH	Alheim-Heinebach
KOCO AG	Rimsting
KS Solar GmbH	Weikersheim
Kube Holzbau + Photovoltaik GmbH	Breitenbrunn

Germany



Kühn-Elektrotechnik GmbH	Karlsruhe
Leitungspartner GmbH	Düren
LEW Verteilnetz GmbH	Augsburg
Licht & Kraft Elektro GmbH	Marienberg
Ludwar Elektrobau GmbH	Gerolzhofen
Macherner Bau- und Elektrogenossenschaft mbH	Machern
Main-Spessart-Solar GmbH	Bessenbach
mep GmbH	Werdau
Mitteldeutsche Braunkohlen	Zeitz
Mitteldeutsche Netzgesellschaft	Halle (Saale)
MTW Elektrobau GmbH	Chemnitz
Muhr und Bender KG	Attendorn
MVV Energie AG	Mannheim
Netz Leipzig GmbH	Leipzig
NKF Service GmbH	Schmölln
Oberhausener Netzgesellschaft mbH	Oberhausen
Omexom GA Nord GmbH	Magdeburg
ovag Netz AG	Friedberg
Parabel GmbH	Berlin
PFAFF Energietechnik GmbH	Bad Vilbel
Prinzing Elektrotechnik GmbH	Salach
PVStrom Solar Investments GmbH & Co	Kirchheim am Neckar
regionetz GmbH	Eschweiler
RheinEnergie AG	Köln
RWE Power AG	Köln
RWE Service GmbH	Dortmund
Rückert GmbH	Forstern
SAG Montagegesellschaft mbH	Chemnitz
Saller Gewerbebau	Weimar
Schneider Electric GmbH	Berlin
Schneider Electric Energy GmbH	Dortmund
Schulz Systemtechnik GmbH	Doberschütz
Selbmann Elektroanlagenbau GmbH	Penig
SEM Schalt- und Energietechnik München GmbH	München
Senvion SE	Hamburg
Siemens AG	Trier
SMA Solar Technology AG	Niestetal
Solea AG	Plattling
SSS Energietechnik	Hainichen
Stadtwerke Aschersleben GmbH	Aschersleben
Stadtwerke Bielefeld GmbH	Bielefeld
Stadtwerke Bietigheim-Bissingen	Bietigheim-Bissingen
Stadtwerke Bonn GmbH	Bonn
Stadtwerke Brühl GmbH	Brühl
Stadtwerke Dinslaken GmbH	Dinslaken
Stadtwerke Düren GmbH	Düren
Stadtwerke Eilenburg GmbH	Eilenburg
Stadtwerke Georgsmarienhütte	Georgsmarienhütte
Stadtwerke GmbH Bad Kreuznach	Bad Kreuznach
Stadtwerke Karlsruhe GmbH	Karlsruhe
Stadtwerke Lengerich GmbH	Lengerich
Stadtwerke Lutherstadt	Lutherstadt Wittenberg
Stadtwerke München GmbH	München
Stadtwerke Nettetal GmbH	Nettetal
Stadtwerke Neuwied GmbH	Neuwied

<p>Germany </p>	<p>Stadtwerke Quedlinburg GmbH Stadtwerke Riesa GmbH Stadtwerke Schwarzenberg GmbH Stadtwerke Tuttlingen GmbH Stadtwerke Unna GmbH Stadtwerke Würzburg AG Starkstromanlagenbau Lobenstein eG Strom und Gasversorgung SÜC Energie und H2O GmbH SWT Stadtwerke Trier Syna GmbH Taminco Germany GmbH Technische Werke Tittel-Group GmbH Volz Elektrotechnik GmbH Wagner Schaltanlagen GmbH Walter Energy GmbH & Co KG Waresa Bau GmbH Wirth Elektrotechnik GmbH WSW Energie- und Wasser AG Zollfrank</p>	<p>Quedlinburg Riesa Schwarzenberg Tuttlingen Unna Würzburg Bad Lobenstein Vermold Coburg Trier Frankfurt Leuna Delitzsch Schmölln Mannheim Staudt Jagstzell Nordhausen Dischingen Wuppertal Herzogenaurach</p>
<p>Finnland </p>	<p>FinnGTL Oy</p>	<p>Kouvalo</p>
<p>Italy </p>	<p>E-Werk Lüssen Energie Werk Prad am Stilfserjoch Energiegenossenschaft Villnöss Sonderbetrieb Gemeindewerke Schlanders Sonderbetrieb Gemeindewerke Latsch</p>	<p>Lüssen Prad Villnöss Schlanders Latsch</p>
<p>Jordan </p>	<p>El Concorde Construction Ltd.</p>	<p>Amman</p>
<p>Luxembourg </p>	<p>CREOS Luxembourg S.A.</p>	<p>Strassen</p>

<p>Austria</p> 	<p>Schmachtl GmbH Vorarlberger Kraftwerke AG Kiechel + Hagleitner GmbH TIWAG Tiroler Wasserkraft AG Energieversorgung Kleinwalsertal Ges.m.b.H Deisl Beton Ges.m.b.H. Stadtwerke Schwaz GmbH</p>	<p>Linz Bregenz Bregenz Innsbruck Riezlern Hallein Schwaz</p>
<p>Switzerland</p> 	<p>SBB Schweizerische Bundesbahnen</p>	<p>Luzern</p>
<p>Thailand</p> 	<p>Piller Thailand Siemens Limited Bangkok Charoenchai Transformer Co. Ltd.</p>	<p>Nakorn Pathom Huay Rajburana Bangkok</p>
<p>Czech Republic</p> 	<p>Elpro-Energo s.r.o.</p>	<p>Praha 1/Trinex VI</p>

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