

Advantages:

- Small volume
- Robust
- Low weight
complete station including all equipment and 630 kVA transformer
about 3400kg
- Transformer compartment accessible via plug-in shutter on both sides
or through the roof.
- Front doors, door stops left and right adjustable, swivel angle 90° and 135°
- Construction mains supply-/emergency supply inlet
- The steel base (about 320kg) is hot-galvanised, 100% poreles and double
powder coated. The base unit is off modular designed (patent).
- Oil spill basin, 3mm sheet stainless steel supported above ground.
Leakage may be examined from the outside.
- Cable inlet above basepan.
- Leading cables through the base structure is possible.

All in all an exceptional cheap, easy to handle and economic solution

1. Operation and technical regulations

1.1 The compactstation type **LCS-E** is used as a mains and customer station.

1.2 The station is tested and certified to PEHLA at 20 kA for 1 second.
(Type of accessibility: **B** closed doors)

1.3 The station is tested and conforms to the following VDE regulations and IEC Standards:

VDE 0100	Erection of installations with rated voltages up to 1000V.
VDE 0101	Erection of installations with rated voltages above 1000V.
VDE 0105	Operation of power installations.
VDE 0110	Insulation co-ordination for equipment with low voltage systems.
VDE 0111/IEC 71-1	Insulation co-ordination to equipment for three phase a.c. systems above 1000 V
VDE 0141 VDE	regulations for Earthing a.c. equipment for rated voltages above 1000V.
VDE 0532/ IEC 76-1,2,3,4,5	Transformers and reactors.
VDE 0670/IEC 466	A.c. switch gear and controlgear for voltages above 1000V.
VDE 0670/Section 611 (EN 61330/IEC 1330)	Customer ready stations HV/LV

1.4 Mounting, set-up and operation of compact stations is executed by trained personal only, trained in the use of MV-switchgear, transformers, LV-switchgear, the appropriate VDE- regulations and accident prevention procedures (VBG 4).

2. Station housing

Temperature class = 20° K

Like all LAHMEYER-Compactstations, the type LCS-E compactstation is factory tested and supplied ready for use. The station contains one MV-compartment, LV-compartment and a transformer compartment.

After connecting the LV and MV cables, the station is ready for immediate operation.

2.1 The station housing type LCS-E, is manufactured in folded sheet metal design. It consists of the following parts:

- Steel base pan, hot-galvanized, 100% poreles and double powder coated.
- Alternative: Base pan with intermediate mounting frame to fit CTA10 transformers.
- Two sheet metal folded beams, connected to the base pan or intermediate frame, for mounting MV- and LV equipment.
- Easy removable roof, (only one screw to be removed in the LV-compartment.
- Two lockable plug-in shutters within the side walls.
- Housing including doors and shutters for the LV- and MV compartments, removable in one piece from the steel base pan or intermediate frame.

2.2 Material and surface treatment

Material (under soil): Support structure Steel sheet, 3mm, hot-galvanized, 100% poreles and double powder coated (zinc dust coating)

Oil pan for mounting the transformer, stainless steel 3 mm (1.4301-2B)

Material (above soil level): Steel sheet, stripe galvanized (< 225 g/mq)

Surface treatment: Computer guided powder coating and 5-zone surface pre treatment, attain coatings <70µm in thickness. The used powder lacquer is free of heavy metals and non toxic.

Zinc and Powder coatings = highest corrosion prevention.

Standard colour: Olive green (RAL 6003-Sruktur)

Note:

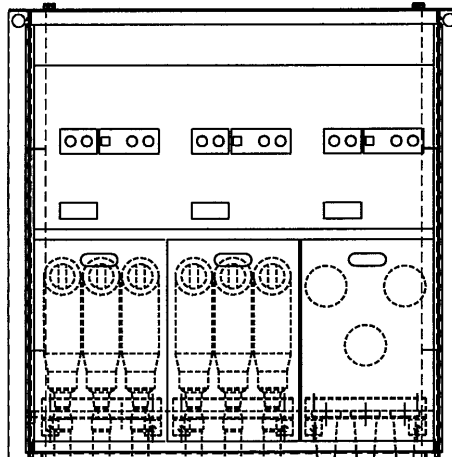
The applied powder coating may be overcoated with other colours, using a special liquid lacquer. Rufing up the surface is not necessary.

The corrosion resistance is not effected.

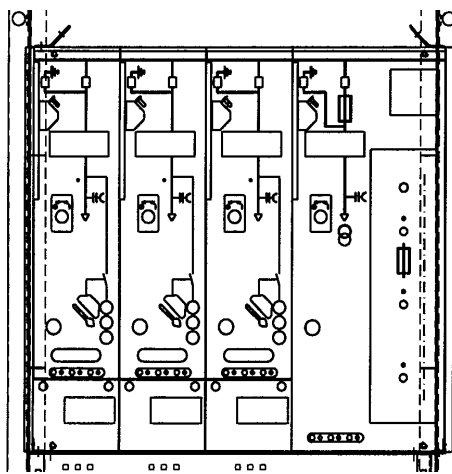
- 2.3** All housing fittings are resistant against corrosion
- 2.4** Doors to the MV- and LV compartment are fitted with three hinges each. The doors are fitted with metal- swing lever locks, prepared for fitting standard profile cylinders with 45° or 90° lock-in angle. The profile cylinders are protected with weather hood's. The same swing lever locks are used for the plug-in shutters.
- Profile cylinders are not supplied with the station –
- The door to the MV-compartment is fitted with 4x multiple security lock. Both doors may be hinged up either left- or right sided. This may be done on site. Door swing: 90° and 135°.
- 2.5** **Safety class**
- | | |
|-------------------------|-------|
| MV- and LV compartment | IP 54 |
| Transformer compartment | IP 43 |
- 2.6** The compact station, type LCS-E may be transported and lifted completely equipped. The station is lifted via the base pan or the intermediate frame. (refer to technical documentation, page 11)
- 2.7** All fitted elements are electrically connected and earth'd at a central earthing starpoint in the LV- compartment.
- 2.8** All parts under voltage are shock prove covered.
- 2.9.** MV and LV compartment may be fitted with lights, switched by door operated contacts.

- MV-switch gear -

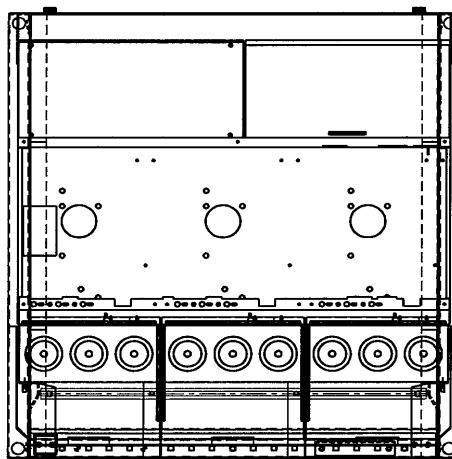
Illustration : switch gear options



Make **Alstom**,
Typ **FBA**
3 sections., 2 K + 1 TSS



Make **Driescher**,
Typ **MINEX-C**
4 sections., 3 K + 1 TSS



Make **Siemens**,
Typ **8DJ20**
3 sections., 2 K + 1 TSS

5. Low voltage distribution panel



Low voltage distribution
LAHMEYER- Compactstation, type LCS-E
 with low voltage distribution.
 Incoming feed via 910 A rail, 8 outlets.

5.1 Option (standard)

5.1.1 NH-fused load break switches to DIN 43623 size 3
 as main switch including:

- reinforced copper-busbars and contacts, high temperature resistant insulation material
 - generously reinforced dimensioned-busbar.
 - Use of Al-Oxide-ceramics for the fuse body
- at voltage: 400V
 current : 910A

Fuses to be used:

NH-fuse inserts to DIN 43620 and VDE 0636 part 22	3 pieces
Operation classification	gTr
Rated current	910 A
or with copper blades	1000 A

5.1.2 Output power

NH- fuses load break switches 400/630A 8 pieces

5.1.3 Current transformer connection options 900/600/300/5A, in L2 1 piece

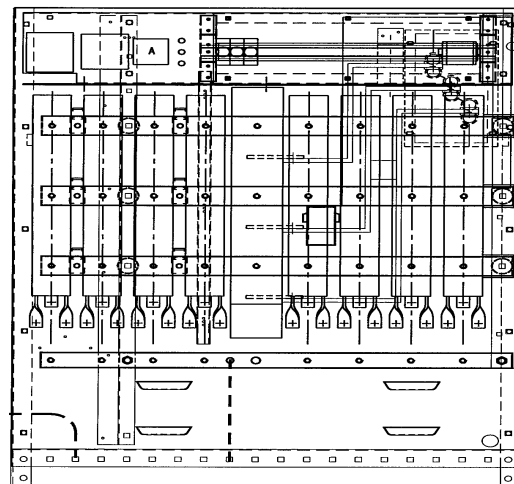
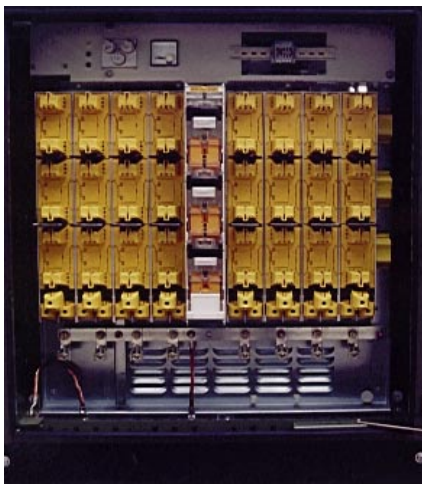
5.1.4 Bimetal type current meter with peak-hold pointer (15min) 1 piece

5.1.5 Synchron sockets for synchronizing, fuses 3 pieces

5.1.6 Inlet for construction site supply in the right side wall of the LV-compartment, Ø each 100 mm 2 pieces

optional:

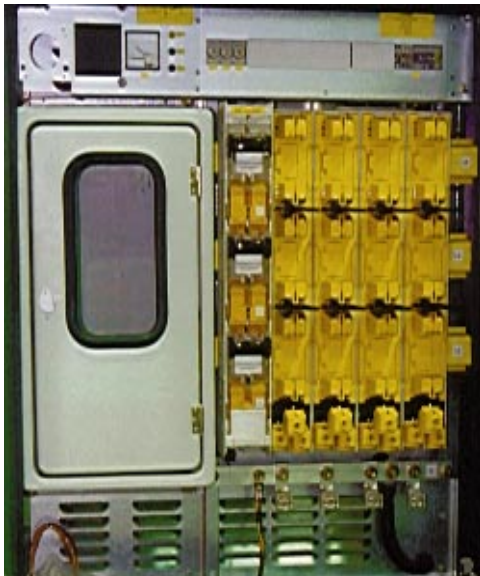
- 3 current meters inc. current transformers
- 1 voltmeter incl. switch and fuses.
- 1 Schuko- mains socket, fused
- 1 lighting and fuse



- 5.1.7 Meters, fuses and terminal strips are mounted in instrument panel above the LV-distribution.
- 5.1.8 MP and PE busbars for the entire earthing are mounted in the LV compartments floor area.
- 5.1.9 The cable fixture is placed below the removable floor panel.

5.2 Option (with LV- counter meter)

The illustration shows a „customer specified station“.
Four of eight outputs have been replaced by certified current transformer and one LV-counter-meter cabinet, size 1.



6. Earthing appliance

The central earthing bar is situated in the LV-cabinet. The soil earthing lead or deep soil earther are directly connected to the central earthing bar. In this way, all housing parts and the base pan are directly connected to the main earthing.

7. Transport, placing and erection

The LCS-E is manufactured ready for connection and fully tested.
For transport, placing and erection refer to technical documentation BI.12

7.1 Placement on the building site.

Dimensional drawing No. 283432.4 (with steel pan)

7.2 Resulting terrain height and surface water must be considered when determining the excavation depth.

Site excavation drawing No: 283436.4 (with steel pan)

7.3 The excavation pit must have a strong floor bearing. Floor unevenness must be compensated with a levelled sand bed.

In case difficult floor conditions are encountered, a lean-concrete substructure or concrete thresholds are recommended.

7.4 The station is placed on site by using an adequate lifting gear. The LCS-E can be lifted and put in place completely equipped.

Set-up for lifting, Drawing No: 283434.9 (with steel pan)

7.5 Procedure for cable connection:

7.5.1 To be removed on the MV- side:

- Face panel of the base pan
- Cover of the MV-switch gear- cable-connection-compartment.
(see manual)
- Lower door threshold (screwed on sideways)
- Front floor panel.

7.5.2 To be removed on the LV- side:

- Base pan fill skirt.
- Front floor panel.
- Lower door threshold (screwed on sideways)

8. Technical documentation

- Dimensional drawing (with steel pan)	283432.4
- lifting-set-up drawing (with steel pan)	283434.9
- Site excavation drawing (with steel pan)	283436.4
- loading plan (with steel pan)	283435.6
- Typ testing Page 1+2	
- Electro magnetic field test record	