

110/10-6kV - 25MVA Mobile Sub-Station

TECHNICAL DESCRIPTION

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A. SCOPE

This preliminary technical specification, is based on the Customer Technical requirements and it is explaining and covers our best solution for:

- 25MVA 110/10-6KV - 50Hz mobile substation

These mobile substations, are composed by 2 semi-trailers, capable to work independently, equipped respectively with 110KV CIS type outdoor switchgears, HOkV surge arresters, 25MVA Power Transformer, and the auxiliary services (HV Trailer) and IOkV CIS type switchgear, plus the auxiliaries (i.e. control & protection panels, AC/DC panels, and other auxiliaries (MV Trailer).

These Mobile substations are suitable for emergency or permanent installation.

B. STANDARDS

All design, calculations, materials, equipment, manufacture, construction, and testing are conform to the latest edition of IEC standards.

C. SITE AND SERVICE CONDITIONS

The substation is designed for outdoor use and will be operated under the following conditions and performance criteria:

Altitude:	<1000 m above sea level
Max / min air temperature:	+40 / -45 ° C
Max wind velocity:	40 m/s

D. MAIN REQUIREMENTS & DATA

The mobile substations, are factory assembled, wired, and tested. The customer will be able to operate the substation upon arrival on site after the necessary interconnections.

These Mobile substations are designed, taking into consideration, as per IEC std, the following data:

Description	HOkV	10-6KV
- Rated Voltage:	HOkV	10KV
- Rated system highest voltage :	123kV	12KV
Rated frequency:	50Hz.	50Hz
Rated short-time current :	31,5kA	25kA
Rated duration of short-circuit:	3 sec	3 sec.
H.V. Power frequency (wet) :	275kV	28kV
H.V. Impulse withstand voltage :	650kV	75kVp
- Pollution level:	hight	hight

The general arrangements of the substation shall be as show on drawings here attached, having the following reference number:

N°000555-A-101	Trailer HV - Operative Conditions
N°000555-A-102	Trailer HV - Transport Conditions
N°000555-A-201	Trailer MV - Operative Conditions
N°000555-A-202	Trailer VV - Transport Conditions

E. MOBILE SUBSTATION EQUIPMENTS

E. 1 - Semi-Trailers

The Mobile Substation is assembled on two low bed semi-trailer having the following features:

HV Trailer

N° of axes	N°	5
<i>overall length</i>	<i>Mts.</i>	19,00
<i>overall width</i>	<i>Mts.</i>	3,20
<i>overall transport height</i>	<i>Mts.</i>	4.08
<i>Estimated Total weight</i>	<i>Kg.</i>	75.000

MV Trailer

N° of axes	N°	2
<i>overall length</i>	<i>Mts.</i>	13,50
<i>overall width</i>	<i>Mts.</i>	3,20
<i>overall transport height</i>	<i>Mts.</i>	4.08
<i>Estimated Total weight</i>	<i>Kg.</i>	25.000

Frame

Skeleton type, constituted by two main beams H-tensile steel suitable crossed by R.S.J. members through their length, thus forming the loading platform. R.C.S. side members enclose and complete the whole structure. Skeleton type frame of the trailers lowered platform and fully covered with chequered plate on the swan neck . N° 4 plates with holes for the positioning of the ground cables will be fitted on the frame.

King pin

3 1/2 bolted type. SAE standard on HV trailer

2 bolted type. SAE standard on MV trailer

Suspension

Semi-elliptic multileaves spring and load equalizer. Tie-rod adjustable on one side.

Axles

Made in high quality steel, 15" type. Brake lining size <j> 310 x 190 Asbestos free.

Wheels and Rims

10 holes disc rims to suit 10 studs wheels.

Tyres

Size 245/70 R 17.5, 143/141J twin mounted. **Tyres capacity complies with CUNA n° NC053-15**

Landing Gears

Two-speed landing gears manually operated fitted on the front of the swan neck. Self-levelling support pads.

Braking system

2 lines (service and emergency) compressed air type. Parking brake, winch type.

Electrical system 24 Volt, 7N + 7S pin plug.

The system features marking light, stop light, direction indicators, number plate light, backing light, fog light and reflectors.

Finish and Painting

All steelwork components are previously sandblasted, painted with two coats of primer and one coat of final colour. NOTE: Painting and completion of the trailer are as per our Supplier standard.

Basic accessories

1 spare tyre

4 mechanical landing gear (fitted under the lowered platform)