

Package Substation

The efficient solution for your electrical distribution network



Why Prefabricated Substations?



- **Safety: A fully tested electrical equipment**
 - > Much more safety for the public and operators compared to traditional civil works substations



- **Time & Money: Reduced cost/ time of installation with full project management**
 - > Definition of the MV/LV substation design including the right components solution to fit local standards
 - > Production of the right enclosure: product fitted to the needs
 - > Integration of all the components following a safe and industrial process
 - > Factory assembled and tested solution: ensuring commissioning
 - > Shipping and installation reduced with solution delivered ready to be connected
 - > Benefit from expertise and 40 years of field proven experience



- **Reliability: IEC 62271-202 compliant substations**
 - > That mean better resistance to temperature rise, humidity, pollution etc.
 - > To improve:
 - > equipment life span
 - > service continuity
 - > public and operator safety



The assurance of a more secure network

You want to optimise and manage your power distribution network securely

Biosco: a solution of MV/LV prefabricated substations in compliance with IEC 62271-202

The Biosco MV/LV prefabricated substations are safe and tailored to your needs. They ensure the safety of people and goods and contribute to the network's continuity of service.

Biosco, safe and effective substations



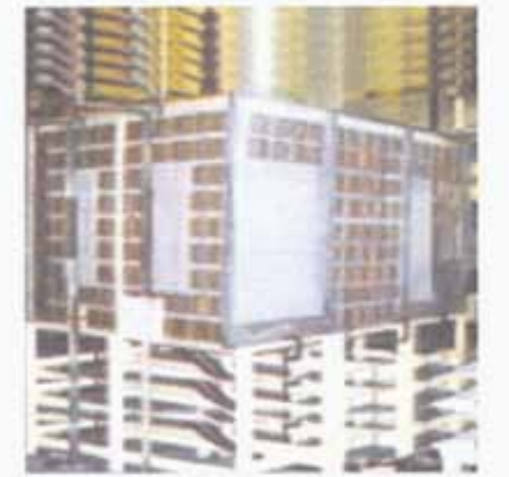
>10,000

Biosco MV/LV prefabricated substations installed each year, all over the world.

Schneider Electric, worldwide leader in supply of electrical equipment offers wide range of Medium Voltage products. Schneider has an installed base of more than 100,000 package substations all over the world. Package substation is prefabricated substation; ready for installation at site. Package substations are most preferred solutions nowadays as there are concerns regarding space, aesthetics and safety.

Highlights:

- > In accordance with IEC 62271-202 standards and specifications
- > Conforms to ISO 9001: 2000 and ISO 14001
- > Factory routine tested
- > Certified materials and manufacturing processes
- > Type tested components in type tested enclosure
- > Internal arc withstand
- > Optimization of life time cost
- > Optimization of supply and installation lead time
- > Compact size (reduced footprint and height)



Internal arcing withstand test

The benefits of Biosco range:

- ✓ The highest possible safety guaranteed by compliance with IEC 62271-202 standard
- ✓ Rapidity of installation on site
- ✓ Complete adaptation to the environment in terms of standard-related, dimensions, climatic and aesthetic requirements
- ✓ Performance guaranteed by a comprehensive equipment range

Configurations in Package Substation

Outdoor Package Substation for secondary power distribution up to 11 & 22 kV 2MVA.

- > MV Switchgear (Single breaker to 4 way configuration)
 - > Step down distribution transformer (Oil & Dry)
 - > LV switchgear (ACB & MCCB's)
 - Additional requirements
 - > HT Metering (CT, PT Unit)
 - > APFC Panel up to 375 kVAR
 - > RTU
- > The offering includes various voltage levels of 11 kV & 22 kV starting from 100 kVA to 2000 kVA.
 - > The step down transformer can either be Oil/ Dry type based on the customer requirement.

Outdoor Package Substation for Renewable Energy for power evacuation upto 33 kV.

- > Step up distribution transformer
 - > MV Switchgear (manual/ motorized)
 - > HT Metering
 - > RTU
- > Package substations installed and suitable for outdoor application is used for evacuating electrical power generated in Wind/Solar installations at 33 kV.
 - > The step up three winding transformer used is oil type transformer in solar application.
 - > The power generated in wind turbine is stepped up to 33 kV by step up distribution transformer and is evacuated.

Outdoor Package Substation for distribution network upto 33 kV.

- > MV Switchgear (Single breaker to 3 way configuration)
 - > Step down distribution transformer (Oil & Dry)
 - > LV switchgear (ACB & MCCB's)
- > The offering includes various kVA rating levels of 33 kV PSS starting from 400 kVA to 2000 kVA.
 - > The step down transformer can either be Oil/ Dry type based on the customer requirement.

Salient features of SE make Package Substation

- > Factory built package substation assemblies meet users' needs with respect to reliability, safety, overall quality, appropriateness for the local surroundings.
- > 2 mm thick painted GI enclosure mounted on a hot dip galvanized 4 mm thick GI base.
- > Partitions between compartment with 2 mm thick GI sheet.
- > Gaskets / Stiffeners provided as required.
- > Internal arc tested for 20 kA-1s.
- > Access to MV& LV compartment provided through double door arrangement.
- > Louvers designed for natural ventilation and thermal class K10.
- > Roof designed to support load up to 250 kg/m².
- > Spaciously designed to have adequate clearance.
- > Internal lighting facility provided.
- > Degree of protection – IP54 for HT and LT compartments, IP34 for transformer compartment.
- > Options in dimensions based on range of standard transformer ratings.
- > Fitted with a lifting beam for easy installation at site

Medium voltage Switchgear

MV compartment is equipped with Schneider Electric make SF6 insulated MV switchgears RINGMASTER or FBX (11kV PSS); FLUSARC (33kV PSS)

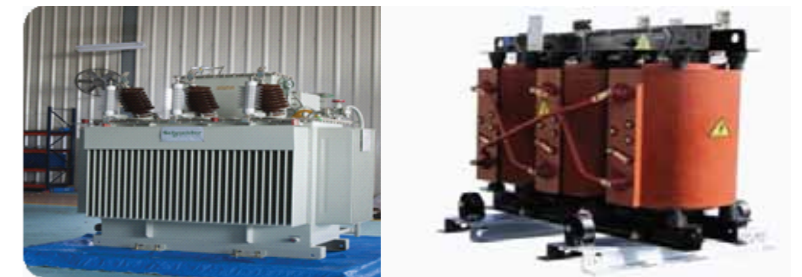


The MV compartment of the package substation houses MV switchgear with various functions from single breaker to 3 or 4 function RMU. The RMU configuration depends on the dimensions of the package substation. RMU can be motorized/ manual as per the requirement. We offer RTU also as integral part of PSS.



Distribution Transformer

Transformer compartment of the package substation houses MV distribution transformer with off load tap changers. The transformer is hermetically sealed Oil type or Cast resin Dry type based as per customer requirement. The design is such that the efficiency is high and the losses are low. The transformer used inside the PSS are of Schneider range.



Special requirements for transformer with OLTC can be catered for rating up to 630 kVA in 11 kV package substations.



Low Voltage Switchgear (with or Without LV Metering)



- > LV compartment is equipped with Schneider Electric make LV switchgears comprising of Air Circuit breakers, Moulded Case Circuit Breakers etc based on customer requirement and transformer kVA rating.
- > The number of feeders depends on the dimension of the Package substation.
- > The incomer of LV switchgear can be rated upto 3200A and the maximum outgoing feeders can be considered upto 10 nos. for 250A MCCB, 7 nos. for 400A MCCB, 5 nos. for 630 MCCB.
- > Options are available to select the ACB from Fixed Manual (FM), Fixed electrically operated, MDO & EDO.



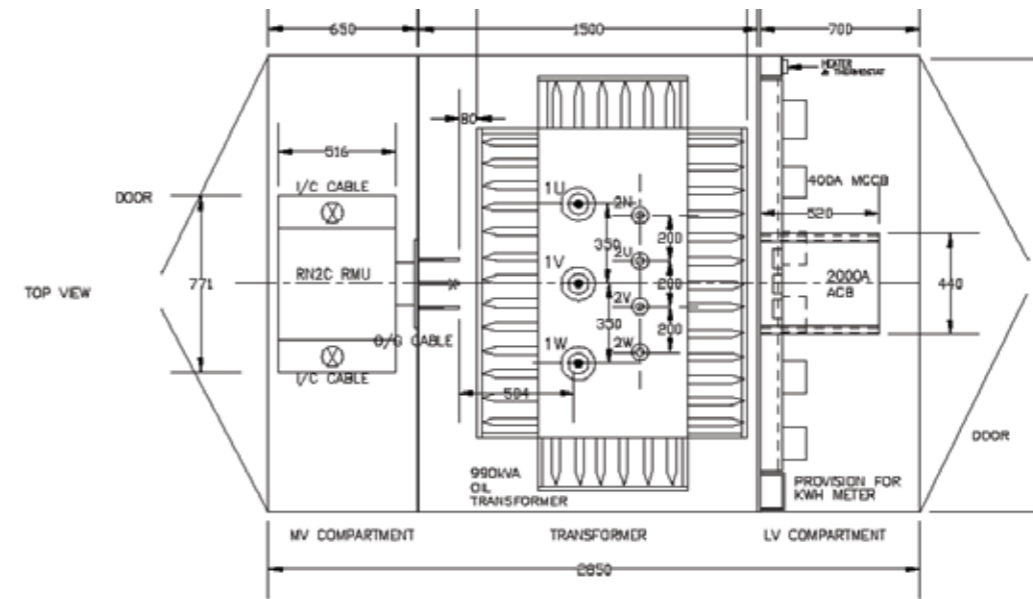
100%

of the substations are tailored to your needs.



Biosco:
the all-in-one solution.

Typical GA of SE Make PSS 990KVA



INTERCONNECTIONS BETWEEN RMU & TRAFD BY 3x1Cx150 sqmm. CABLE

BIOSCO Range in INDIA

| Range | IN05 (500 kVA) | IN05H (500 kVA) | IN10 (1000 kVA) | IN16 (1600 kVA) |
|-------|----------------|-----------------|-----------------|--------------------------|
| W | 1530 | 2000 | 2000 | 2400 |
| L | 3300 | 2850 | 3300 | 4550 |
| H | 2200 | 2200 | 2400 | 3050 |
| RMU | Ringmaster | FBX/ Ringmaster | FBX/ Ringmaster | FBX/ Ringmaster/ Flusarc |

ALL dimensions are in mm only.

BIOSCO Range in INDIA

The substation satisfies the most rigorous standards in terms of safety & reliability :

Public safety: MV/LV substations are located in places accessible to the general public. Safety of people must therefore be guaranteed in the conditions specified by IEC 62271-202 standard,

Operator safety: throughout substation life, personnel must be able to work in complete safety to ensure proper operation of the electrical power distribution network,

Operating safety: the MV/LV substation must guarantee safety of the MV and LV networks,

The guarantee of a delivery time complied with and a minimized site installation time.



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