



Package Substation- BIOSCO upto 24KV

The right way for your
Electrical Distribution Network



Sudhir - Powering the Nation

GENERATION • DISTRIBUTION • ELECTRIFICATION

Sudhir is a name synonymous with Power. It stands tall in the Indian Power Generation Sector, providing complete turnkey Electrical solutions from GENERATION DISTRIBUTION to ELECTRIFICATION. An industry leader in the field of setting up Diesel based Captive Power plants upto 20MW having its corporate office in Gurgaon. The company has a wide blue-chip customer base and operates through multiple manufacturing facilities across India and focuses on Diesel & Gas Generators, HT & LT Switchboards, Transformers, Packaged Substation & Turnkey EPC Contracts

The product line includes the widest range of Diesel Gensets 7.5-3000 kVA with a fuel option of Gas, complete range of HT 11kV & 33kV Panels, LT Switchboards, Oil & Dry Type Transformers, Packaged Substation & Turnkey EPC contracts covering electrical and mechanical service of Generation, Distribution & Internal Electrification. Eight ultra modern state of the art manufacturing plants strategically located in Silvassa, Athal, Jammu, Manesar & Bangalore help serve over 40,000 customer.

Sudhir at a Glance

- Sudhir - A legacy of 4 decades
- A Complete Power Solution Company
- Equity partners Goldman Sachs & General Electric (GE)
- India's largest Generator set manufacture-Over 10,000 MW installation base
- Pan India network of office covering all metros and cities
- Eight state of the art manufacturing plants, one at Manesar, Silvasa, Athal, Bangalore & Four at Jammu
- 24 hour customer assistance helpline to provide prompt service support

Leaders get together... Schneider-Sudhir

- Sudhir under licence from Schneider Electric manufacturers BIOSCO - Packaged Sub Station (PSS)
- BIOSCO design & know-how from Schneider Electric, France
- BIOSCO design conforming to IEC 62271 - 202
- Factory Built Packaged Sub Station (PSS) for outdoor applications
- Manufactured at Sudhir, Manesar plant, with best manufacturing practices of Schneider.
- A co-branded product covering the best of products:
 - Schneider Electric - LV & MV products
 - Sudhir - Transormers, LV panels & Metal Housing

The Guiding System, the new way to build electrical systems

Substation range upto 24 KV

The Schnieder-Sudhir MV/LV prefabricated substation is part of a comprehensive offer of products with consistent design.

The PSS is a co-branded product offer covering the best of products from Schneider Electric & Sudhir.

BIOSCO design comes from Schneider Electric, France. All LT & MV electrical distribution products come from Schneider Electric, India. The Transformer, LT panels & Housing are products from Sudhir.

All these products have been designed to operate together to ensure electrical, mechanical and communication compatibility.

Synergy of Schneider-Sudhir are optimized and efficient: better continuity of supply, enhanced safety for people and equipment, guaranteed upgradeability, effective monitoring and control

Combined with you know-how and creativity, the Guiding System ensures optimum installations that are dependable, upgradeable and compliant with standards.

...together a unique concept to meet every customer requirements

Schneider Electric Offering

MV switchgear:
Ringmains Unit
RM6, Ringmaster

MV switchboard

- Rated voltage: upto 24 kV
- Rated current:
- loop: 630 A
- Transformer protection:
200 A upto 630 A
according to specifications.
- Short-time withstand
current: upto 25 kA - 1s



Schneider Electric & SGL Offering

LV switchboard

- Enerpact and
- Simpact
- Compact NS
- Masterpact and Simpact
- Masterpact and compact NS

LV switchboard

- Rated voltage: 440 v
- Incomer: upto
2000 A circuit breaker
- Feeders: max. upto
10 nos. of 250 A MCCB or
7 nos. of 400 A MCCB or
5 nos. of 630 A MCCB



MV/LV transformer

- Rated MV voltage: upto 24 kV
- Power: upto 1000 kVA

SGL Offering

▪ Oil type transformer
▪ Dry type cast resin transformer
▪ Dry type VPI transformer

Schneider Electric Offering



Optional Equipment

- LV metering
- MV metering
- Upto 300 kVAR APFC Panel
- Remote interface
- Remote control of MV switches
- Monitoring of fault passage indicator
- Remote monitoring interface (load, alarms, events)
- Fault passage indicator

Characteristics of Outdoor Package Substations

Ambient temperature	normal operating conditions	upto 40° c	
Standard colour		RAL 1001(Cream)	
Outdoor operation		yes	
Compartmentalised Design		yes	
Types of ventilation		natural	
Degree of standard protection	MV & LV compartment	IP 54	
	Transformer compartment	IP 34	
Electrical Characteristics			
Rated Voltage (KV)		12/17.5	24
Rated insulation level	kv rms 50Hz 1min	28/38	50
	kv impluse, 1.2/50µs	75/95	125
Rated frequency		50	
Switch connection to MV network			
Rated current (A)		630	
Short time withstand current	kA - 1s	25	
Peak withstand current	kA peak	62.5	
Transformer protected by circuit beaker			
Rated current (A)		200/630	
Breaking capacity (A)	Transformer off-load	16	
	Cable off-load	30	
Short time withstand current (kA 1s)	circuit breaker	25	
peak withstand current (kA peak)	circuit breaker	62.5	
Immersed transformer			
Rated power (kVA)		100 to 1000	
Rated secondary voltage(V)		440	
Vector Group		Dyn 11	
Tapping range(%)		± 5 insteps of 2.5%	
Compliance with standards		IEC 439-1; BS EN 601439 part1; IEC 947-1 and 947-2	
Metering devices (LV & MV)		yes (optional)	

in partnership with
Schneider Electric

Reaching excellence

BIOSCO

- BIOSCO substations have successfully passed internal arcing withstand test for 20kA 1s.
- Access to the MV & LV compartment provided through a double door arrangement
- Louvers designed for natural ventilation and thermal class K10.
- Roof designed to support load upto 250kg/m²
- Spaciously designed to have adequate clearance.
- Degree of protection for MV/LV compartment is IP54 & for transformer compartment Ip34.
- LV interconnection made of Al./CU busbars
- Internal earthing with 50x6mm Aluminium or 25x2mm copper busbars.



Schneider Electric & SGL Offering

- Remote Terminal Unit:**
Easergy T200
- Fault Passage Indicator:**
Easergy Flair
- Remote monitoring interface**
Easergy W200



Factory-built enclosure

- Factory-built MV/LV Substation assemblies meet users' needs with respect to reliability, safety, overall quality, time-saving and appropriateness for the local surroundings (climatic conditions, operating mode, architectural requirements..)
- 2mm thick painted GI enclosure mounted on a hot dip galvanized 4mm thick GI base.
- Partitions between compartments with 2mm thick GI sheet.
- Gasket/ Stiffners provided as required.
- Internal lighting facility provided.



- MV/LV Prefabricated substation**
- Galvanized steel.

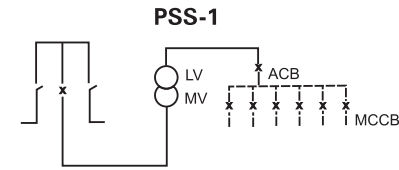
Together as partners

Package Substation Supply of Electrical Power to LV Networks. These functional assemblies are:

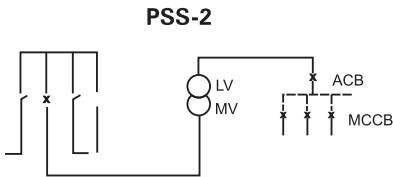
- Factory built and CPRI tested
- In compliance with IEC 62271-202
- Ready for network connection
- Equipped for outdoor operation
- Equipped for manual or remote controlled MV network management

Description of Outdoor Substations

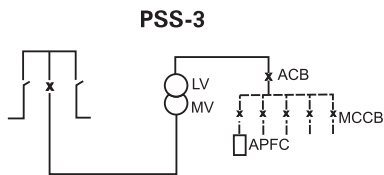
- A 2mm thick painted GI enclosure mounted on a hot-dip galvanized 4mm thick GI base. Access to the operating day to the transformer itself is provided by two double doors located on each side of substation. The door can be padlock and/or lock protected. The partitions between the compartments are in 2mm thick GI.
- MV Switchgear is a compact SF6 insulated ring main unit with 2, 3 or 4 functions.
- Transformer is oil-immersed or dry type.
- **LV Switchboard:**
 - Either a fuse-protected feeder board fitted with a main unit incomer and 4 to 12 feeders.
 - A rack fitted with an incoming ACB and MCCB outgoing feeders
 - customised design as per requirements (optional)



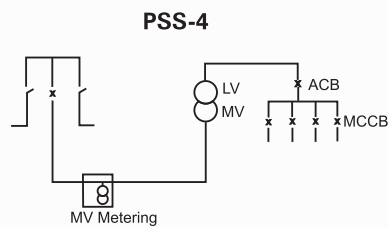
PSS-1



PSS-2



PSS-3

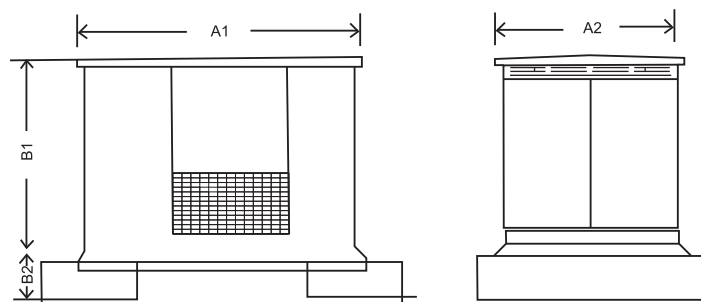


PSS-4

Standard Configuration

Model	Configuration
PSS-1	3 way RMU with oil transformer and LV Panel
PSS-2	4 way RMU with oil transformer and LV Panel
PSS-3	3 way RMU with oil transformer, 300 kVar APFC and LV Panel
PSS-4	3 way RMU with MV metering, oil transformer and LV Panel

General Installation and Civil Works Layout



The table below gives footprint dimensions for each enclosure.

KVA	A1	A2	B1	B2*
Upto 1000	3300	2000	2400	700*

*Recommended Plinth (Concrete)

Transport and installation

Package substations are delivered in a protective cover or optionally packed for sea transport. They are fitted with a lifting beam. Package substations dimensions allow 20-feet open top container transport. Units are delivered fully equipped, only the concrete foundation slab and external cable connection are required on site. Commissioning and operating instructions are provided with each substation.

Note : Specifications may change due to regular product updations.



Corporate Office, Gurgaon



Athal Plant



Jammu Plant



Manesar Plant



Powering the Nation

Sudhir Power Limited

(Formerly known as Sudhir Gensets Ltd.)

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