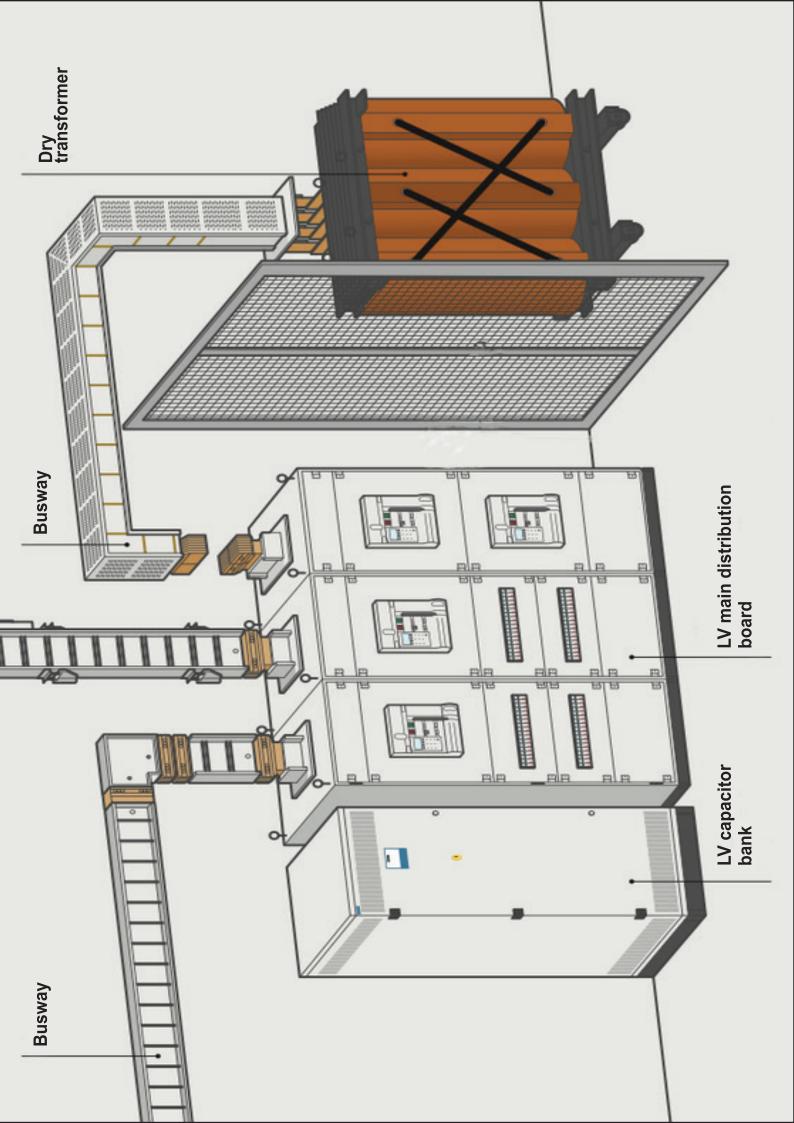
Transpower®







TRANSFORMER

Oil Type Distribution Transformer

TRANSPOWER brand three phase 11KV/0.415KV, 50Hz, oil immersed air-colled distribution transformer with rated capacity of 100KVA to 5000KVA is an essential component of power distribution networks. Like other TRANSPOWER brand products, these transformers are also quality tested and manufactured as per IEC/BSS standards and offer the consumer safety, reliability and cost efficiency in designing their distribution networks.

Description

The range consists of transformers complying with the following specification:

- Three-phase transformers, for indoor or outdoor use (installation to be specified).
- Step down type, step-up on request. Rated frequency: 50 Hz.
- Maxmum abbient temperature: 40°c.
- Mineral oil immersed
- Breathing type transformers with integral filling.
- Cover bolted on tank.
- ONAN type natural cooling.
- Standard anti corrosion surface traeatment and coating.
- Final color TEC beige.

Basic Fittings

Each transformer includes:

- 1 off circuit tapping's switch with pad locking locked on the cover, this switch operates on the highest rated voltage to bring the transformer to the supply voltage-actual value
- Oil conservator
- 3 HV porcelain busing • 2 earthing terminals
- 2 lifting lugs
- 1 filling plug
- Protection indes, IP 15 as option
- Oil level gauge • 4 LV flat bars
- 4 bi-directional rollers
- 1 rating plate to be fixed on LV side
- 1 draining device



Routine tests are carried out on all transforme during manufacture. Each transformer is issued with an official test certificate:

- Applied voltage dielectric test (50hz-1mm) Measurement of:
- No load losses and no loa current. MV & LV winding resistance.
- · Impendance voltage and load losses.
- The transformation ratio & vector group.
- Dielectric strenght of oil.

Standards

These transformers comply with the following standards.

- IEC 76.
- And CENELEC harmonization document HD 398-1 to 398-5.

Options

The following fittings may be provided as an option:

- 3 HV fixed plug-in-co nectors
- LV cable connection box
- Hermetical sealed transformer with internal fittings
- Buchchulz relay or a protection relay.
- DGPT2 indicator:
- 1 gas detector/low level indicator with one connector.
- 1 over pressure contact.
- 2 thermostats for alarm & tripping.
- 1 dial type thermomenter indicator.





Technical Specification

Q ²	ated Pomer	ing Class	ot Group	ight of	ediency	O ^{uetall}	mension	4	n eidi ^t		Watt Losses	Im	P. Voltage
KVA	ΚV			Hz	H(mm)	L(mm)	W (mm)	Oil (Lt)	Total (kg)	No Load	Full Load	%	
100					1220	950	780	130	660	245	1635	4	1.39
150					1280	965	760	210	780	350	2000	4	2.695
200				1350	1200	800	230	1050	435	2820	4	2.78	
250			Dyn11 3	50	1405	1235	715	240	1100	520	3180	4	3.478
315					1540	1450	780	300	1390	660	3715	4	4.38
400					1620	1530	880	330	1450	740	4975	4	5.56
500					1630	1590	940	380	1765	855	5500	4	6.956
630	11/0.415	Dyn11			1890	1710	885	450	2210	900	6100	6	8.76
800					2060	1825	1045	665	2470	1165	8610	6	11.13
1000					2105	1925	1125	780	3100	1300	9500	6	13.91
1250					2170	2030	1190	815	3290	1800	12350	6	17.37
1600					2240	2050	1200	975	4600	2000	14500	6	22.26
2000					2310	2125	1260	1240	5500	2400	17200	6	27.82
2500					2480	2150	1250	1510	5950	2900	21800	6	34.78
3150					2530	2300	1530	1700	8000	3220	22000	7	36.58

4 LV porcelain bushings

Control & protection device

Locking device

TRANSFORMER

Cast Resin Dry Type Transformer

Advantages Of Cast Resin Transformer

- Installation to near people
- Non-flammable and self extinguishing
- Less area than oil immersed transformers for the same rating
- Maintenance free
- Excellent resistant to polluted and on moisture ambient
- No need for drying for re-operation after deactivation for a long period
- Coils can be changed on-site for any king of reason
- Minimization of cable losses when placed directly to customer's center
- Nominal power can be increased 50% by cooling fans
- Environmental friendly as it is not containing toxic chemicals inside
- Resistance to high impulse voltage
- Excellent resistant to short-circuit



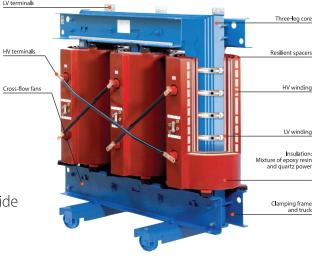
Best dry type cast resin transformers cover the following international standards

- IEC 60076-11 HD 464 S1
- HD 538.1 S1 EN 60726
- VDE 0532
 ANSI C57.12.01



Distribution Transformers (The losses and impedances are according to CENELEC EN50541-1)

- Rated power 100KVA-30MVA
- Vlotage class 11KV-36KV





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KVA	KVA	No Load	Full Load	%	Length mm	Width mm	Height mm	
	100	320	1900	4	1450	760	1300	580
	160	450	2600	4	1550	810	1400	690
	200	540	3000	4	1580	410	1450	870
	250	600	3400	4	1600	850	1500	960
	315	730	4250	4	1600	850	1580	1070
	400	850	4900	4	1650	870	1700	1260
	500	1000	5800	4	1700	920	1770	1490
12KVA	630	1120	6700	6	1850	1000	1850	1720
121(1//	800	1350	8200	6	1900	1040	1990	2030
	1000	1540	9000	6	2000	1085	2150	2420
	1250	1850	11350	6	2100	1150	2260	2790
	1600	2150	12900	6.5	2250	1250	2450	3270
	2000	2620	16250	6.5	2350	1300	2500	3840
	2500	3310	18200	7	2500	1400	2650	4570
	3150	4160	23200	7	3050	1800	2900	5490
	160	960	2600	6	1750	950	1800	1390
	250	1280	3400	6	1800	1100	1850	1660
	400	1650	5700	6	1900	1150	2000	2200
	630	2200	6700	6	1950	1150	2100	2850
36KVA	1000	3100	9000	6	2100	1300	2300	3600
	1600	4200	12900	7	2350	1350	2550	4850
	2500	5800	18400	7	2650	1450	2750	6500
	3150	6900	23000	8	3100	1900	3000	7300

Gas Insulated Switchgear (GIS)

GIS is intended for application in power transmission and distribution substation to undertake the critical role of providing stable power supply to the grid. GIS offers various advantages in terms of compact size, minimal maintenance, high product quality with reliable operation, ease in installation, independent to environmental conditions, reduced operating cost and better personal safety.

Salient Features

Compact design and reduced space requirement

- Hermitically sealed for life
- High degree of reliability and safety
- Virtually maintenance free
- Touch proof cable connectors & bus bars
- Reduced total cost considering space requirement & long trouble free

Product Life

- Compatible for remote/SCADA operation
- Conforms to IEC-62271-100 / 102 / 103 / 200 & IEC 62271-1 / IS 13118
- Type tested VCB of E1, C1, M1 / M2 class
- Internal arc tested for 11kV, 26.3 kA IAC AFLR for 0.1 & 1 sec
- Motorized three position dis-connector cum earth switch
- Extensible on both the sides as per the site requirements

Application

- Primary & secondary power distribution network
- Substations in cities or populated areas
- Contaminated or polluted areas
- Underground substations
- Wind power and solar plants
- Hydro electric power plants



Parameters	Unit	TPG12	TPG36			
Rated Voltage	KV	12	36			
Rated Frequency	Hz	50	50			
Rated Normal Current	Α	1250 /2000	1250/2000/2500			
Rated Insulation Level	KV	12/28/75	36/70/170			
VCB and DS Rated Short Time Current for 3 sec	KA	26.3/31.5	26.3/31.5			
Rated Short-Circuit Breaking Current of the Circuit Breaker	KA	26.3/31.5	26.3/31.5			
Rated Short-Circuit Making Current of the Circuit breaker	KA	66/79	66/79			
Rated Operating Sequence		0-0.3 sec-CO-3min-CO				
Insulating Gas System						
Insulation Gas		SF6	SF6			
Minimum Gas Pressure Level for Insulation	Bar	0.2G	0.2G			
Rated Gas Filling Pressure Level for Insulation	Bar	0.4G	0.4G			
Lock Out Pressure	Bar	0.2G	0.2G			
Degree of Protection		IP67 & IP5X				
Panel Overall Dimension(hXwXd), mm		2200 X500-600 X1150				
Applied Standard		IEC62271-200				

Air Insulated Switchgear (VCB) 11KV & 36KV

Transpower engineering limited manufacturer's quality 11KV & 36KV switchgear panel in accordance with IEC/BS standard, which can be operated easily. These 11KV & 33KV switchgear are made of major electrical equipment- Vacuum Circuit Breaker (VCB) imported from world famous electrical companies like ABB/GE/DRESCHER WEGBERG/EATON. In every steps quality is maintained in the international standard.

Features

- Floor rolling type breaker with horizontal isolation & horizontal draw-out.
- Inaccessible live parts & rack in/out with door closed condition ensures operator safety.
- Compartmentalized Panel with built in base frame & ramp.
- CG make highly reliable vacuum interrupters & protection relays
- Type tested for extended mechanical endurance of M2 class as per IEC 62271 100 ensuring 10,000 operating sequences.
- Stringent Electrical parameter compliance (E2 & C2) can be provided on demand.
- Tested for rapid auto re-closing duty with SCADA compatible control system.
- The optional features like draw-out type PT, Power-pack, Integral earth switch series trip arrangement for unmanned substation (without auxiliary supply) can be provided.
- Internal arc tested as per IEC 62271-200.
- Fully type tested product at renowned testing laboratories.

Application

- Utilities and Power Plants
- Industrial Segments like Cement, Textiles, Pulp and Paper Automotive, Petrochemicals, Oil Etc.
- Switching Duties for Capacitor, Motors, Auxiliary, Generator Units for Power Plants





Characteristics	Unit	VCB		
Rated Voltage	KV	12	36	
Rated Current	Α	630-4000	630-2000	
Rated Frequency	Hz	50	50	
Rated Breaking Current	KA	20-50	31.5-40	
Rated Making Current	KA	31.5-125	65-100	
Power Frequency Withstand Voltage	kV rms	28 (std) / 35 (optional)	70	
Impulse Withstand	kVpk	75 (std) / 95 (optional)	170/195 (OptionI)	
Operating Duty	Cycle	O-0.3sec-CO-3min-CO		
Degree of Protection		IP 4X (std) / IP 5X (optional)		
Applicable Standard		IS 1318, IEC 62271-100/200		
Panel Dimension (hxdxw)	mm	1800-2250x1800-2100x650-800		

11KV & 36KV Switchgear (LBS)

The 11 KV & 36 KV load break switches are manufactured suitable for mounting in sheet steel enclosure. The TEL type load break switch offers a simple & compact construction with epoxy insulators, double switch blades, forged contacts with arc quenching chamber, lagging pin and loop less current path. The nylon /FRP insulation makes the switch light weight with greater electrical safety and mechanical strength. LBS panel is available in free standing indoor /outdoor type.

The main frame is welded steel structure and the contacts are mounted on epoxy insulators. The upper fixed contact houses the arc quenching chamber and the connection terminal. The switch is also equipped with spring-assisted mechanism due to which constant speed is achieved during opening and closing operation. The switch is also provided with stored energy tripping device.

Features of Load Break Switch Panel

- Very high operating reliability
- Simple maintenance & inspection
- High dynamic and thermal strength
- Tested as per IS-9920/IEC62271
- Special bottle arc-chutes
- Current interruption without visible arcs
- Simple driving mechanism
- 11 KV & 36 KV air break switch (LBS) with HT fuses and earthing facility & interlocking
- Resin cast current transformer of suitable ratios.
- Separate PT chamber with withdrawable type resin cast potential transformer
- Completely separated incoming and outgoing cable compartments with epoxy resin seal off buishings
- Test terminal block
- IT fuse etc.



Parameters	12 KV	36 KV	Available combinations		
Type of Break	Air b	reak			
Rated Voltage	12 KV	36 KV			
Rated Insulation Voltage	28 KV RMS/75 KV PEAK	50 KV RMS/125 KV PEAK	Load Break Switch + HRC Fuse + Fuse Trip Mechanism		
Rated Current	630A , 1250 A	630A	Load Break Switch + HRC Fuse +		
Rated Frequency	50	Hz	Fuse Trip Mechanism + Earth Switch		
No. of Phase	3		Load Break Switch + HRC Fuse +Fuse Trip Mechanism + Shunt Trip & Electrical Standard Indicators		
No. of Break/Pole	Sin	gle			
Rated Short Circuit Withstand Current	20 KA, 31.5 KA	25 KA	Load Break Switch + HRC Fuse + Fuse Trip		
Rated Short Circuit Peak Withstand Current	80 KA	100 KA	Mechanism+ Earth Switch + Shunt Trip & Electrical Standard Indicators		
Rated Short Circuit Making Capacity	20 KA RMA/50 KA PEAK	20 KA RMA/50 KA PEAK	Liectrical Standard Indicators		
Panel Over all Dimension mm	2100×90	00×1000			

12kV / 36kV Outdoor VCB KIOSK

The outdoor vacuum circuit breaker Kiosk type switchgear can be directly installed at site on a plinth. Only the power and control cable connections need to be made up to the kiosk. This is a totally enclosed construction with IP55 degree of protection. The VCB can be fixed or drawout type. The CTs, PTs and relay control panel is included in the kiosk. Depending upon the site requirement, the power supply can be taken through the roof bushings or cable box or a combination of roof bushing and cable box. Operating safety to personnel is ensured through appropriate interlocks. Interlocks with upstream/downstream isolators also can be provided.

Salient Features

- Compact and Sturdy
- Reliable Vacuum Technology for Switching
- Less Maintenance and High Reliability
- Complies to IP55 Degree of Protection
- Conforms to IEC 62271-100 / IS 13118
- Compatible for Remote and SCADA Operation
- Roof Entry Bushing
- Ease of Installation
- Ease of Maintenance
- Enhanced Safety

Application

- Public Distribution Networks
- Rapid Auto-Reclosing Applications
- Switching Duties for Capacitor, Transformers, etc.
- Industrial Distribution
- Suitable for Mining Application
- Wind Power & Solar Plants
- Industrial Substations



Parameters	Unit	TOVK12	TPOVK36	
Rated Voltage	KV	12	36	
Rated Frequency	Hz	50	50	
Rated Main Bus Bar Current	Α	800/1250 *	800/1250 *	
Rated Insulation level *	KV	12/28/75	36/70/170	
Rated Short Time Current for 3 sec	KA	20/26.3/31.5	20/26.3	
Rated Short-Circuit Breaking Current of the Circuit Breaker	KA	20/26.3/31.5	20/26.3	
Rated Short-Circuit making Current of the Circuit Breaker	KA	50/65.75/78.75	50/65.75	
Rated Operating Sequence		0-0.3 sec-CO-3min-CO		
Degree of Protection		IF	P55	
Panel Overall Dimension (hxwxd), mm	2525X7	00 X1000	2950x1200x2000	
Applied Standard		IEC62271	-100 & 200	

Transpower Engineering Limited manufacturer's quality low voltage switch- gears in accordance with BS486 & BS 5750, part 1 standard which can be operated easily. These low voltage switchgears maintain a dependable safety measures. Our low voltage switchgears comprise manly with Air Circuit Breakers (ACB), Moulded Cases Circuit Breakers (MCCB) and Miniature circuit breakers (MCB) made of ABB-Germany/Italy, Iskra-Slavonia, GE-USA, Schneider- France, ETI – solovania.

Standards

- BS EN 60439-486, 5750-1 compliant.
- Certified busbars and earth bars for fault rating:
- 20 kA for 1 second 50 kA for 1 second
- 50 kA for 3 second 80 kA for 1 second

Compact Assemblies

- Wide range of instrumentation and metering from individual analogue to multi function.
- Future extension of the switchboard.
- Wide choice of devices including ACBs. MCCBs and fuse switches. Comprehensive range of ancillary equipment including power factor correction.

Environmental Policy

Wherever opportunities exist, we will place emphasis on the development of products and services designed to assist others in protecting the environment.

- Trans Power Engineering Corporation metal compartments as standard.
- Busbar rating up to 6300A.
- Totally enclosed busbars and busbar risers in sheet steel compartments, all busbars are insulated with heat retard shrink tube.
- IP31 as standard, higher IP ratings available up to IP54.
- Compact modular design to conserve maximum space.
- From or rear access with protective devices removable from the front.
- Provisions are kept from BBT connections.

Lt Features

- Built in special protection devices like earth fault, under voltage, over voltage and shunt trip
- Suitable arrangement of Copper Bus Bar of appropriate size according to the current ratting.
- Reliable Electrical and Mechanical inter locking.
- Suitable for electric power system of 3-phase AC rated frequency 50/60Hz.
- Rated voltage: 400V
- Rated Current (v) = Up to 6300 Amps
- Rated short time withstand current: Max 120KA / 1sec
- Modular design of Panels makes it easy for assembly, erecting and future maintenance.
- Louvers and Fans for proper ventilation.
- According to the IEC / Bs Standards





POWER FACTOR CORRECTION (PFC)

Reactive power compensation, or power factor correction (PFC), can lower your utility bills starting on the day the equipment is installed. Installation is fast and easy, minimizing downtime. After the equipment is installed, you should notice an immediate improvement power factor, more efficient use of your power system's load, and of course, monthly savings in your electric utility bills.

The traditional way for PFC is switch on the capacitors which are in parallel connection. But if load non-liner one, which produce harmonics, resulting in the damage of capacitors and the PFC cabinet cannot work. The above problem can be solved by L-C (reactance and capacitor) type filter. It is applied with capacitor branch series connection with reactors. L-C type not only can avoid the amplification of harmonic current but also improve power factor, thus reducing energy losses on the transmission line and save energy.

Features

- Voltage rating from 240 to 600 VAC
- Harmonic filtering for optimum power quality
- Small foot print with maximum KVAR
- Standard off-the-shelf units and specification designed
- Upgradeable modular construction
- Stand-alone, multi-unit and integrated systems

Benefits

- Lower utility bills
- Reduced operating costs
- Efficient use of utility power
- Quick ROI and continued savings throughout the life of the equipment
- Easy to install
- Minimal maintenance requirements

Application

- Automotive
- Food & Beverages
- Minerals & Metals
- Water treatment
- Oil & Gas
- Industrial manufacturing





DISTRIBUTION BOARD

Combining robust high quality engineering with the latest international construction, test and installations standard, TEL range of distribution boards has been designed with advice from consultants, contractors, users and distributors.

- The 6300 Amp max incomer final BD assembly complies with IEC 1-61439 & 2.
- ASTA certified fully type-tested to standard IEC 1-61439 & 2.
- Main busbar is tested and rated at full load 6300 Amp.
- Ingress protection up to IP43 with standard to IEC 60529.
- High quality epoxy polyester powder paint finish in two-tone finishing.
- Flat removable gland plates make drilling and access easier
- The modular design allows for many combinations of incomers, allowing freat customer choice increased stocking flexibility.
- The wide range of incomer option includes:
- · MCB or RCCB up to 100 Amp.
- · ACB and Moulded Case Switches up to 6300 Amp.
- External and internal earthing points are provide
- Generous cabling area throughout the range.
- 1.5/1.2 mm sheet thickness.







AUTOMATIC VOLTAGE STABILIZER

Voltage regulation problems account for more than 90% of the power quality problems seen at most sites. The Transpower voltage stabilizers provide protection against mains power sags, surges and brownouts. Each stabilizer has a wide input voltage tolerance and has been designed to provide the ultimate reliability in hostile environments, where the quality of the mains supply cannot be guaranteed

Appliations

Broadcast: Regulation for broadcast transmitter sites and studios.

Commercial: High-rise building, elevator control, large A/C chillers, lighting, other sensitive critical systems.

Industrial : Industrial automation, process control, CNC, factory robotics, heavy load machinery
 Medical : X-ray, CT scanner, MRI system, Radiation therapy machine, other medical equipments.
 : Mobile Base stations, Exchanges stations, control centers and transmission relay stations.

Features

- Extremely wide voltage regulation rnage
- Maintenance free roller type carbon brush
- Infividual regulation with unique small dimension
- Maximum capacity up to 5000KVA
- High Mean time Between Failure (MTBF)
- Reliable and quiet servo motors
- Wheels mounted for easy installantion
- Start up delay to prevent over current inrush
- Osolation transformer on request
- Indoor or outdoor version on request





ON LINE UPS

In the event of AC power failure, the UPS will automatically transfer to battery power and continue to provide power without any interruption for the full amount of time you select. When power returns, the UPS will automatically recharge the batteries for the next unexpected power outage or disturbance.

Features

- High performance true double conversion On LineUPS
- External battery bank (optional) to extend back-up time
- N+X parallel redundancy and capacity expansive (optional)
- Microprocessor control guaratees high reliability
- Power distribution unit (PDU)maintenance bypass switch (optional)

Features

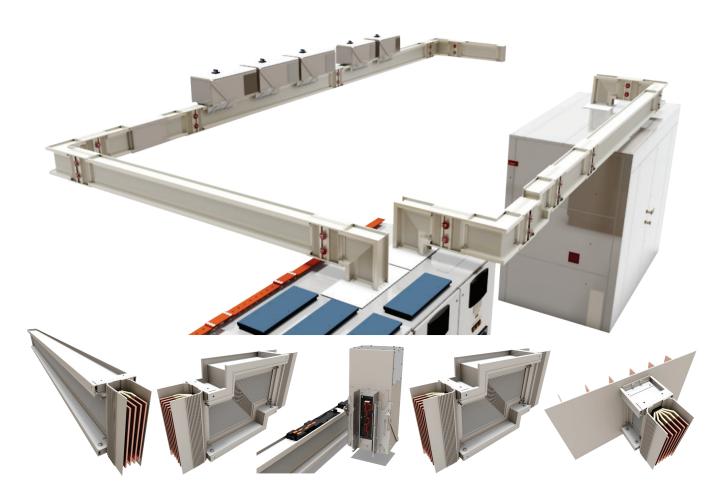
- Low heat dissipation in long time operation
- Input THDi<5% /output THD<2%
- Emergency power –off function (EPO)
- High efficiency mode (ECO mode)
- Fan speed control & DC start
- Output Voltage regulation <1%
- Automatic self-testing function
- Power management software
- Output power factor 0.9

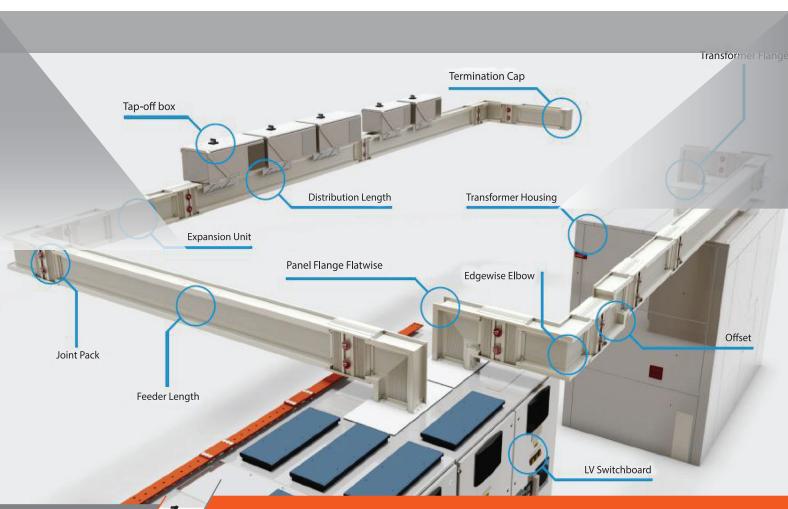
Applications

- Computer and data centers
- Broadcasting and telecommunication
- Industrial process manufacturing
- Medical equipment and healthcare facilities
- Education and research
- Transport systems
- Emergency lighting systems
- Financial systems and services
- Any areas needing critical power management



BUSBAR TRUNKING SYSTEM





Diesel Generator continuous



DIESEL GENERATORS 10-2500 KVA

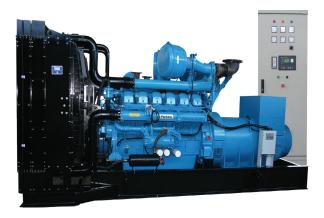




DIESEL GENERATOR

10-2500 KVA

SPerkins





Serkins

10-2500 KVA



30-2500 KVA





Genset

with Canopy











NATURAL GAS GENATATOR



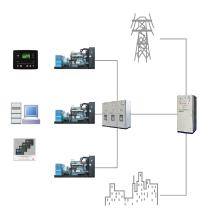
ATS Panel



Features:

- Operated both automatically and manually.
- Employ a Breaker closing time delay installed in order to avoid current and voltage surges.
- Employ automated sensing for:
- Under voltage
- Phase failure
- Phase sequence
- Instilled with Generator start/stop commands
- And Indicate:
- Incoming voltage
- Engine running/faulty conditions
- ACB/MCCB On/Trip conditions
- Engine tests run position for routine test of engines.
- Status signals for remote indications.

Synchronizing Panel





Featurs

- 3-pole or 4-pole system as required
- Various combinations of load transfer by ACBs, MCCBs or Contactors
- Protection class up to IP 54
- · Load sharing/load shedding
- Automatic and manual synchronizing
- Factory built to client's specifications
- Ratings up to 6000A
- Control functions available for engine monitoring, warm-up and cool down periods, emergency shutdown, multi attempt engine start control, engine test runs









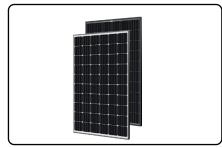












11 KVA SUB-STATION



OUR PARTNERS



































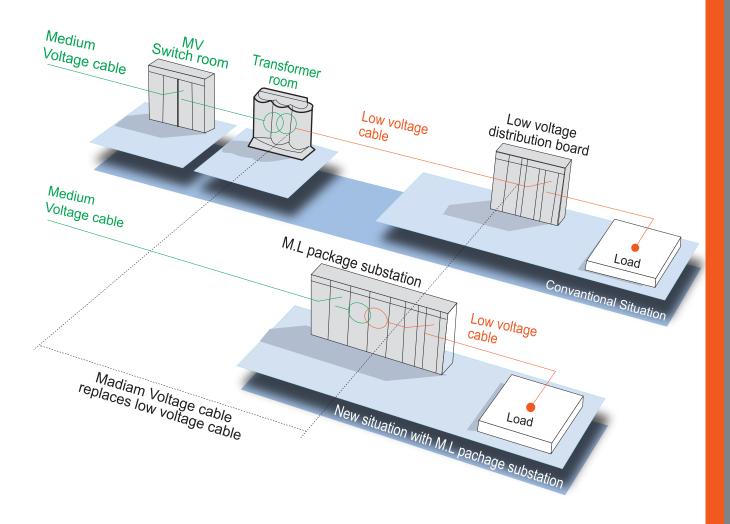






FURUTEC®
Busclust System

MALAYSIA
BBT



TRANSPOWER ENGINEERING CORPORATION TRANSPOWER ENGINEERING LIMITED TRANSPOWER TRADING LTD



Corporate office:

Firoza Tower (3rd floor), 42/A/2, Hatkhola Road, Dhaka-1203, Bangladesh. Tell: +88 02 9563854,+88029514563, Cell: +88 01731 68 48 97 E-mail: info@transpowerbd.com, transpowerbd@gmail.com www.transpowerbd.com