
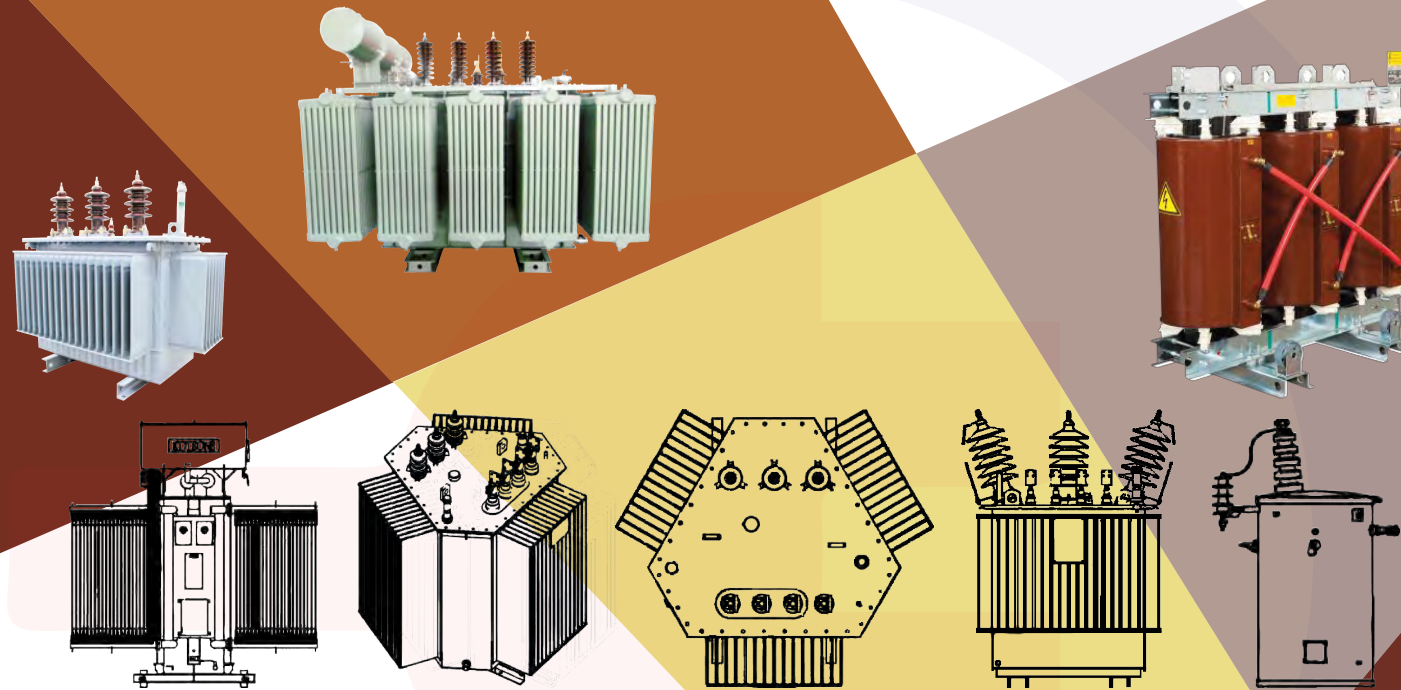




# Powerbreeze®

 [www.powerbreezxbd.com](http://www.powerbreezxbd.com)



 **Factory Address:**

Taltoli, Telihati, Sreepur, Gazipur, Bangladesh.

 **Head Office Address:**

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Power and Distribution  
Transformers

Powerbreeze Engineering LTD



**09617171444**  
**01713158953**



An ISO 9001:2015 Certified Company

## About Powerbreeze

**Powerbreeze Engineering Ltd.** is an ISO 9001:2015 certified electromechanical power engineering company in Bangladesh.

It was incorporated in 2006 by the entrepreneurship of a group of engineers graduated from BUET, KUET & CUET. After the establishment in 2006, day by day Powerbreeze Engineering Ltd has stepped forward with the continuous development of its products through up-gradation of R & D and through achievement of customers' satisfaction by providing them committed after sales services. Now powerbreeze is a trusted name as Transformer and Switchgear manufacturer as well as other electromechanical and power engineering service provider in the engineering industry of Bangladesh.

Powerbreeze has established a new state of the art factory at Sreepur, Gazipur, Bangladesh where the Transformers are manufactured by well renowned branded CNC machines. Powerbreeze has the latest slitting line, cut to length line to process the multi-step lap core cutting to reduce no load loss. Powerbreeze has automatic winding machines to wind the coil and has a VDP (vacuum drying plant) to extract the moisture from the insulation paper for longer life of Transformer. Powerbreeze uses the latest fiber laser machine with interchangeable table to ensure fast and accurate cutting of Transformer tank fabrication and uses 8 tank hot pre-treatment plant to ensure proper surface treatment for better coating performances. Apart from this, Powerbreeze management consciously ensures quality working environment for the workers. We have certification from Fire Service Department, Environment Department as well as Department of Industry and Factories.

From the inception Powerbreeze has supplied quality products manufactured in the factory of Powerbreeze to Bangladesh Power Development Board (BPDB), British American Tobacco, Chevron Bangladesh, Unilever, BSRM, GPH Ispat, PHP, Coats BD Ltd, Banks, Insurances and hundreds of industrial, commercial and residential projects as well as Five Star Hotels and Hospitals. Our valued customers are satisfied on the products and after sales support by Powerbreeze team. Powerbreeze has a dream to be the number one company in the Transformer manufacturing industry of Bangladesh through manufacturing the highest quality products as well as delivering the highest quality services towards the valued customers in Bangladesh.



## Manufacturing & Testing Facilities.

Factory of Powerbreeze has been equipped With the latest machineries and testing equipment to ensure the highest quality of the product. The factory area has 45000 SFT as Production shade and 20000 SFT as open space. The following machines and testing equipment rank the factory as one of the best transformer and switchgear manufacturing plant in Bangladesh:

- 35/10 overhead crane & 5ton overhead crane.
- CNC Auto slitting line
- CNC Cut to length line
- Auto winding machine for disc & layer winding.
- Automatic vacuum drying plant up to 20 MVA capacity.
- 3000 L/H oil centrifuging machine.
- CNC press brake.



- CNC Hydraulic gallotine shear machine.
- Power press machine.
- Fully Automatic Conveyorized power coating line.
- 8 tank hot pretreatment plant.
- Fiber Laser cutting up to 15mm MS Sheet.
- Hydraulic Bending M/C for busbar processing.
- 100KV AC Hi voltage tester.
- No load full load test bench.



- Double voltage double frequency test set.
- Yakagawa power analyzer for loss measurement.
- Contact resistance meter for breaker testing.
- Primary Current injector.
- Secondary current injector.
- Yakagawa power analyzer for loss measurement.
- Contact resistance meter for breaker testing.
- Primary Current injector.
- Secondary current injector.
- Tarn ratio meter

# Cast Resin Transformers

Powerbreeze imports and sells cast resin dry type transformer from Trafoeletto, the very renowned manufacturer of Italy having manufacturing experience of near about 40 years. Cast resin transformer offers a safer and easier solution for the customer as there is a lower fire potential and a reduction in maintenance requirements.

Cast resin transformers are certified in compliance with IEC 60076-11:

As the high voltage windings are encapsulated, the transformers are totally screened against moisture, dust and industrial waste common in heavily polluted environments. The result is greater installability, flexibility and a maintenance free lifecycle. Cast Resin Transformers are mainly used in high cost commercial areas. Their self-extinguishing feature (F1 class), allows the installation inside public buildings like hospitals, hotels, bank and airports where preventing the risk of fire is a must.



## Technical Specification/ data sheet of Trafoeletto:

### ELECTRICAL CHARACTERISTICS

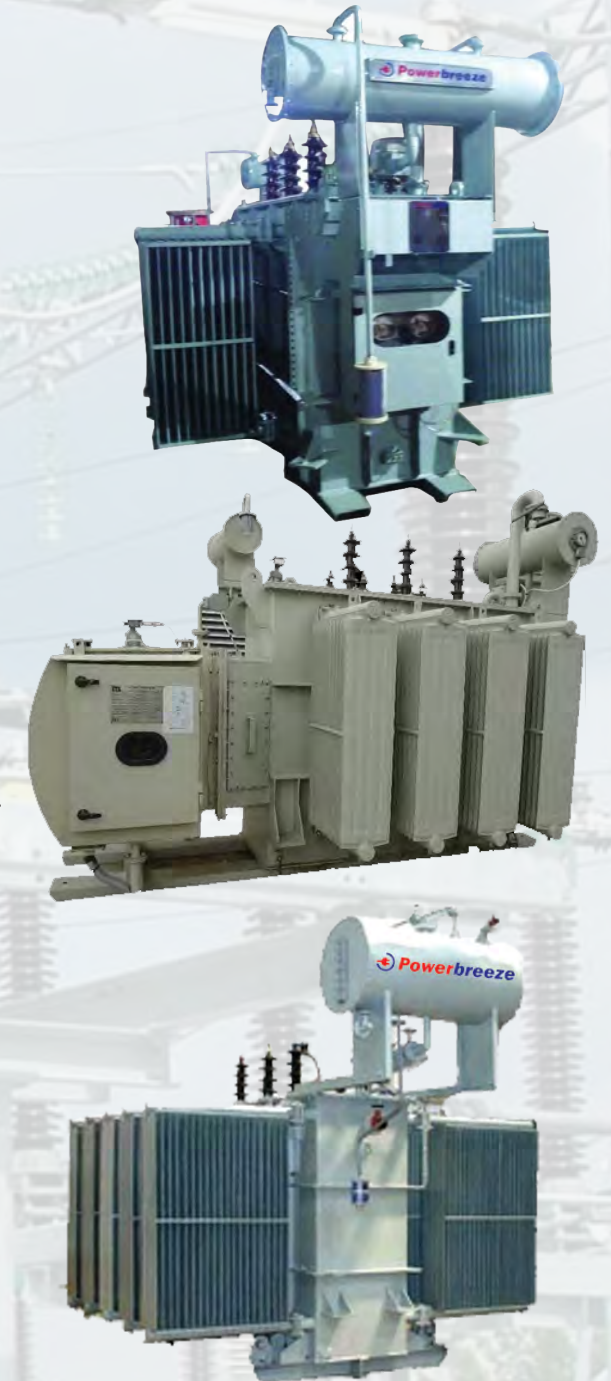
Power	kVA	100	160	200	250	315	400	500	630	800	1000	1250	1600	2000	2500	3150		
No load losses	W	300	410	500	550	650	760	890	1050	1300	1550	1900	2300	2800	3500	4350		
Load losses at 75°C	W	2300	2950	3400	3800	4100	4800	5400	6600	7800	8900	10800	14500	17000	18500	24500		
Load losses at 120°C	W	2600	3350	3900	4400	4600	5500	6100	7500	9000	10300	12500	16500	19000	21000	28000		
Impedance voltage	%	6,0	6,0	6,0	6,0	6,0	6,0	6,0	6,0	6,0	6,0	6,0	6,0	6,0	6,0	6,0		
No load current	%	1,7	1,5	1,4	1,3	1,2	1,1	1,0	0,9	0,8	0,8	0,7	0,6	0,5	0,5	0,5		
Sound pressure level at 1 meter	dB(A)	40	44	45	46	47	48	49	51	52	54	55	56	58	59	61		
Sound power level	dB(A)	51	54	55	57	58	59	60	61	64	65	67	68	70	71	72		
Efficiency	Cosφ=1	4/4	%	97,47	97,94	98,09	98,29	98,51	98,63	98,76	98,80	98,88	98,97	98,99	98,96	99,02	99,13	99,09
		4/4	%	97,19	97,72	97,88	98,10	98,35	98,48	98,62	98,67	98,75	98,85	98,88	98,85	98,91	99,03	98,99
		4/4	%	96,85	97,44	97,62	97,87	98,15	98,29	98,45	98,50	98,60	98,71	98,75	98,70	98,78	98,91	98,87
Voltage Drop Cosφ = 0,9	4/4	%	2,454	2,007	1,866	1,688	1,473	1,373	1,254	1,222	1,150	1,066	1,040	1,082	1,026	0,917	0,955	
Short circuit current	kA	2,4	3,8	4,8	6,0	7,6	9,6	12,0	15,2	19,2	24,1	30,1	38,5	48,1	60,1	75,8		
L	mm	1060	1060	1240	1160	1250	1250	1310	1360	1430	1500	1540	1660	1760	1970	2150		
W	mm	610	625	640	760	760	760	760	760	910	910	910	910	1320	1320	1320		
H	mm	1120	1210	1250	1370	1440	1480	1600	1610	1730	1790	1900	2070	2180	2240	2270		
Total Weight	kg	450	640	730	850	1050	1200	1500	1700	2000	2350	2750	3300	3900	4650	5400		

# Power Transformers

Powerbreeze manufactures wide range of power transformers up to 20 MVA with voltage class of 36 kv in accordance with FEC 60076 standard. These transformers are generally free breathing type, oil filled and fitted with OLTC. Powerbreeze Power transformers, featuring the excellent performance and a high level of reliability proven through a lot of experience accumulated over a long span of period, have been derived to the customers and gained good reputation from the customers.

## Key features of Powerbreeze made Power transformers :

- Insulation level Of 36 KVA.
- Made of 101% IACS Copper Conductor
- Step lap core design
- Low No load and Full Load loss
- Fitted With CTR/ MR OLTC as per Customer requirement
- Special insulation assuagement to reduce eddy currents and magnetic short circuit .
- Disc Winding is used for winding of power transformer of Powerbreeze .
- High grade of insulation materials made by ABB are used .
- The core coil assembly are dried in Automatic Vacuum Chamber to remove 100% moisture from the assembly.
- Tank of power transformer of Powerbreeze are fabricated through CNC Controlled Fiber Laser Machine for accurate and fast fabrication .
- Standard Safety Device of power transformer :
  - ★ PVR
  - ★ MOG
  - ★ OTI & WTI
  - ★ OIL Surge Relay
  - ★ Buchholz Relay



# Distribution Transformers

According to IEC 60076 standards Powerbreeze manufactures a wide range of distribution transformers. These transformers are free breathing type fitted with a conservator with breather box and silica gel. Wide range of transformers in accordance to above standard with different combinations can be manufactured. The transformers are generally designed and manufactured to comply with the IEC publications 60076.



- ⇒ Indoor/Outdoor
- ⇒ Copper conductor
- ⇒ Core: CRGO (M4 or higher grade)
- ⇒ Top oil Temperature rise: as per customer's specification
- ⇒ Average winding temperature rise: as per customer's specification.
- ⇒ Color: as per customer's requirement .
- ⇒ Cooling: ONAN/ONAF as per customer's requirement.
- ⇒ Cooling arrangement: Pressed Steel Radiators
- ⇒ Other optional fittings such as centrifuging valve, Roller, drain valve etc.

**Core reasons to choose Powerbreeze made transformers:**

- 1. Low loss design ensured through processing high grade silicon sheet by CNC cut to length line.**
- 2. High insulation resistance value ensured by drying the transformers through latest automatic VDP.**
- 3. Leak free tank fabrication ensured by sheet processing through latest fiber laser cutting and auto welding.**
- 4. 110% overload capacity ensured by using 101% IACS copper strip from the world renowned manufacturer.**



## Technical data Sheet /Specifications:

**11000V/415V, 3 Phase, 50 Hz ONAN Transform Thermal Class-A Insulation Level: 7,2-12kV 75° C Temp.**

KVA	Losses (Watt) at 75° c		Imp (%)	Regulation (%)		Efficiency at Load		Approx Overall Dimensions (mm)			Total Oil (Ltr)	Total Weight (Kg)	Sound Power Level (dBA)
	No Load	Full Load		1.0PF	0.8PF	50% (Half)	100% (Full)	Length (L)	Width (W)	Height (H)			
100	270	1800	4.00	1.50	3.60	98.07	99.34	900	450	1150	180	700	50
150	340	2200	4.00	1.40	3.71	98.18	99.38	1090	550	1200	200	890	52
200	425	2750	4.00	1.35	3.18	98.34	99.43	1190	880	1250	220	1000	53
250	495	3315	4.00	1.30	3.42	98.43	99.47	1190	970	1250	240	1050	53
315	630	3600	4.02	1.20	3.67	98.46	99.49	1250	1030	1275	290	1350	54
400	780	4565	4.03	1.10	3.84	98.61	99.49	1410	1090	1450	410	1650	54
500	830	5500	4.05	1.05	3.33	98.74	99.54	1480	1200	1550	450	2000	55
630	1050	7500	4.12	1.15	3.19	98.79	99.56	1600	1525	1800	550	2500	56
750	1100	8000	4.50	0.98	3.90	98.89	99.59	1625	1650	1900	650	2950	56
800	1150	8500	4.50	0.99	3.90	98.89	99.59	1650	1230	1950	700	3050	57
1000	1450	9800	5.73	0.95	4.24	98.91	99.62	1870	2110	2000	810	3200	58
1250	1500	1250	5.80	0.93	4.18	99.07	99.68	1930	2690	2050	950	4000	58
1500	1850	14500	5.90	0.90	4.00	98.93	99.64	2020	2800	2150	1200	4500	59
1600	1900	15000	5.90	0.85	4.00	98.93	99.64	2020	2800	2150	1250	4650	60
2000	2290	18500	6.00	0.82	4.50	99.11	99.70	2140	3200	2200	1400	5500	61
2500	2600	22500	6.06	0.80	4.80	99.16	99.72	2280	3500	2250	1600	6000	62
3000	2750	25000	7.00	0.75	4.85	99.19	99.72	2720	4000	2300	1850	6500	62
4000	3250	28000	7.00	0.70	4.90	99.32	99.77	2580	4500	2350	2500	7000	64