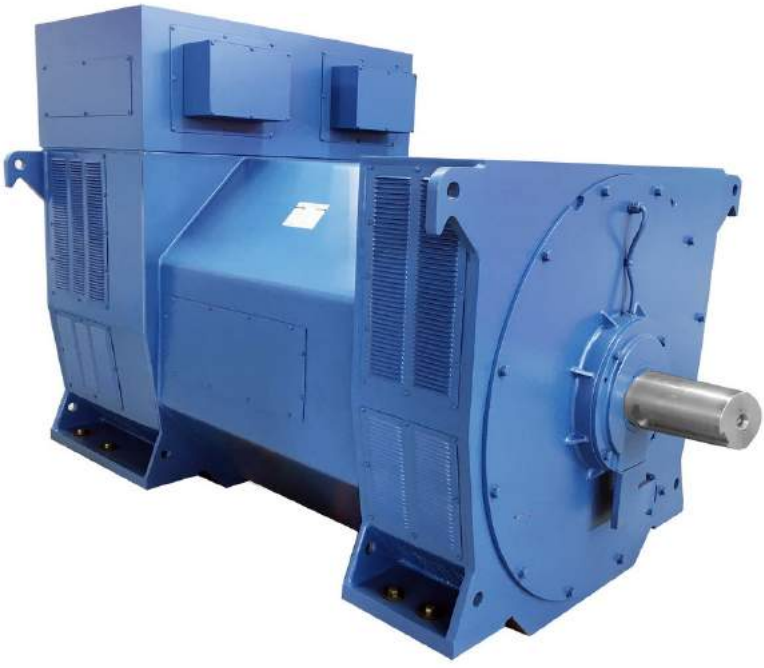
EvoTec

Continually Evolving, Continuous Performance





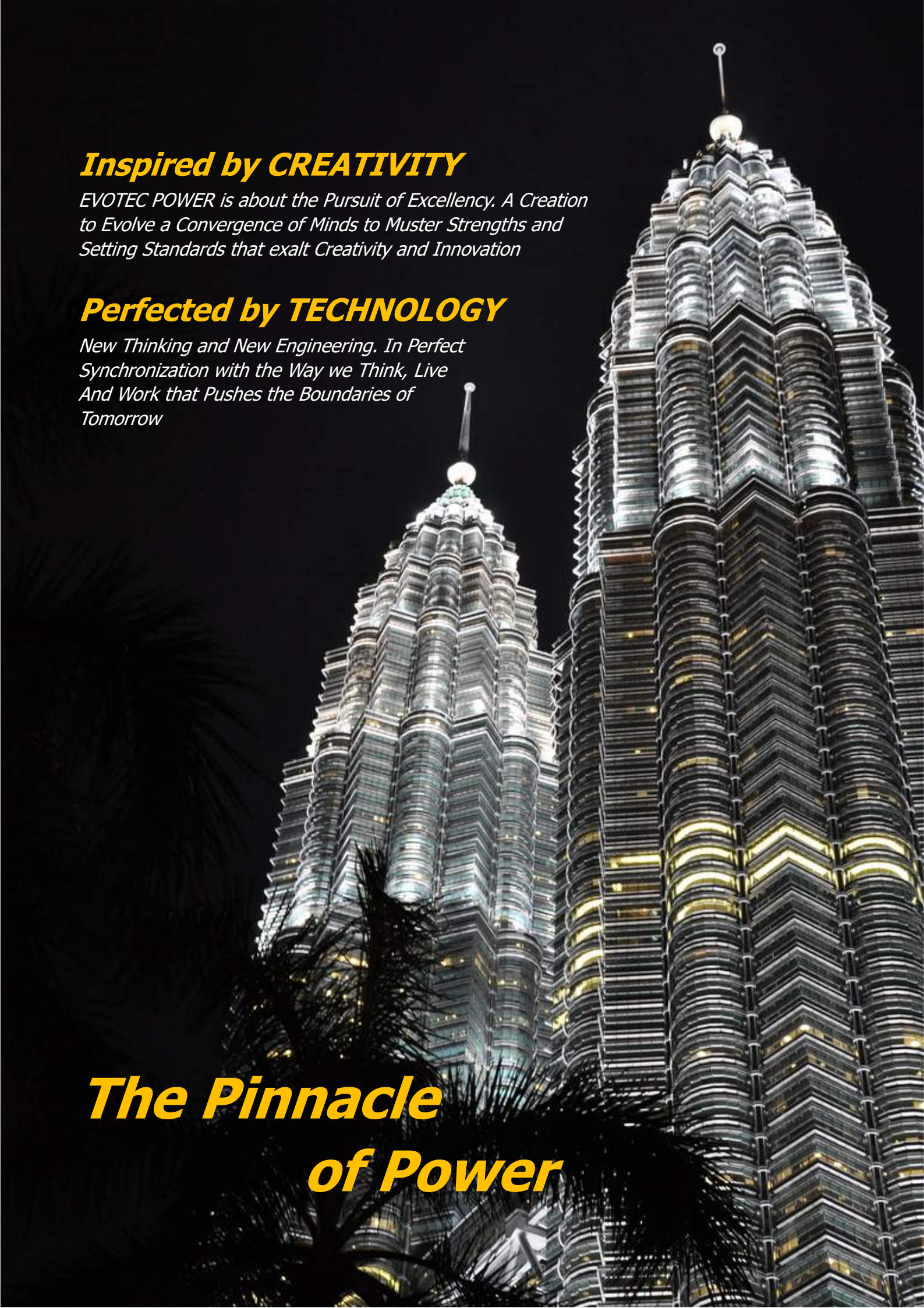
Three Phase Synchronous Generators




TCU168 – TCU568 Frame

8.5kVA – 3500kVA @ 50Hz at 1500rpm
10kVA – 4000kVA @ 60Hz at 1800rpm

ISO 9001:2008
ISO 14001:2004



Inspired by CREATIVITY

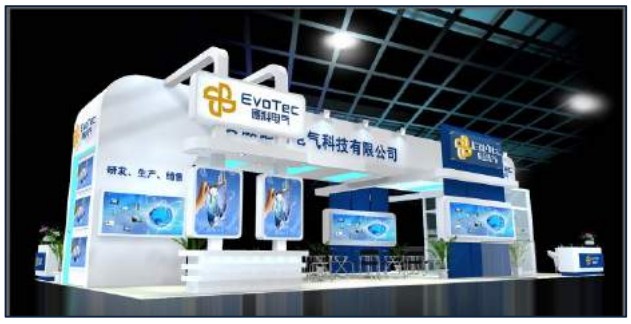
EVOTEC POWER is about the Pursuit of Excellency. A Creation to Evolve a Convergence of Minds to Muster Strengths and Setting Standards that exalt Creativity and Innovation

Perfected by TECHNOLOGY

New Thinking and New Engineering. In Perfect Synchronization with the Way we Think, Live And Work that Pushes the Boundaries of Tomorrow

The Pinnacle of Power

EvoTec Power takes great pride in the strength of our own brandname. We endeavour ourselves to strive to meet and exceed our customer's expectations and to develop generators that bear the hallmark of distinction and quality.



Highest Grade

Synchronous Generators

EvoTec Power is an internationally recognized independent power producer, solely and exclusively specializing in the manufacturing of synchronous generators.

Our corporate mission emphasize on Original, Patented and Innovative Solution in energy transformation with a commitment to long term sustainable development. EvoTec Power is accredited with ISO9001 2008, ISO14001 2004, CE marking approved and has successfully registered 12 technology patented designs.

The engineers and technical team coupled to strong urge for continuous innovation, leads to satisfying the decades-long experience and expertise of our global demands and various needs by means of longest product lifespan, total product reliability and continuous product performance enhancement.

EvoTec Power synchronous generators incorporated the advance European Technology and are designed for optimum performance using high-end software solutions.

EvoTec Power synchronous generators are a state-of-the-art, self-excited, self-regulated and dependable source of power that are proven to endure the harshest environmental applications.

We are confidence of the positive role EvoTec Power takes in contributing to the future of the power generation industry of the world.

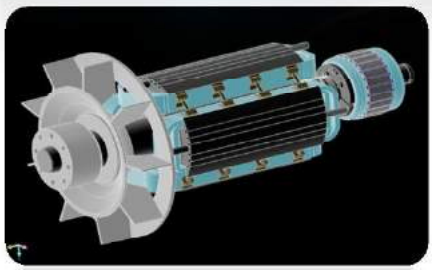
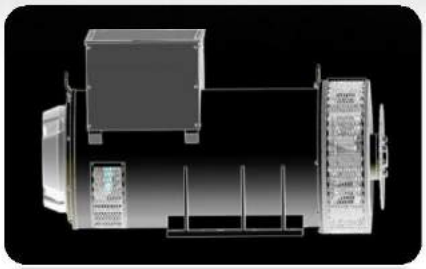
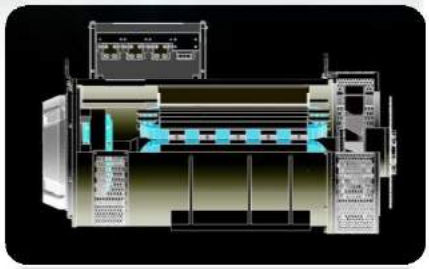
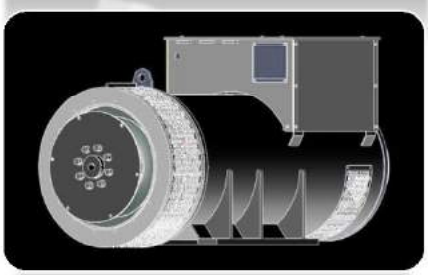
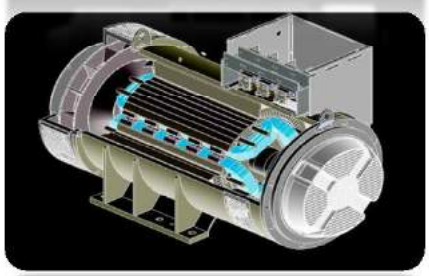
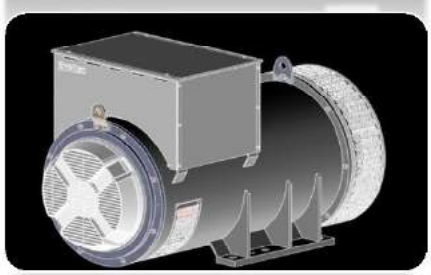
RELIABILITY

KEY FACTOR IN VALUE CREATION

SUPERBLY RUGGED AND COMPACT

A NEW GENERATOR STYLE

A rugged looks and compact body that fits any G-Drive engine and anywhere you wants it, yet packed with top quality generator technology and advance manufacturing processes. The perfect way to discover a new world of Power Generation.

Manufacturing Processes

EvoTec Power has an EXTRAORDINARY ENERGY behind the business. There's a huge determination to make exciting things happen and fantastic.

EvoTec Power Generation Co., Ltd is located in one of the fastest developing industrial park in Hefei City of China. The central facility covers a vast area of 132,000 square meters. It specifically caters for our current and future's development and business advancement. It is our commitment to ensure that we are able to support the continuous growth pace of our Customers and parallel, answering to any acute market demands.

A totally new and modern integrated manufacturing facility for rotating machines, ISO 9001 2008 and ISO 14001 2004 certified, CE marking approved, deploying superior techniques and processes in each specialized fields of design, material specifications, procurement, machining, assembling, testing to final packaging, with stringent quality standards predominating throughout.

The entire production processes are strategically housed in One-Roof and it is a complete One-Stop-Centre. This enabled us to have full control over our day-to-day operation, supervision, communication, delegation and effective management. Indirectly, we have complete control over our marketing, distribution and most important, Quality Control.

EvoTec Power has state-of-art equipments which are used in all the steps of the manufacturing processes, from the casting and stamping of parts to enameling of wires and packaging, resulting in efficient products and proven highest quality.

PATENTED TECHNOLOGY

Technical Evolution for Generators

Technical Features

Duty rating : Continuous - S1
Winding pitch : 2/3
Phase sequence : UVW
Terminal : 6 and 12 leads
Voltage regulation : +/- 0.5%
Speed : 1500rpm or 1800rpm
Maximum unbalance load : 25%
Overload : 10% for 1 hour in every 12 hours
Over-speed : 1.25 times normal speed for 2 minutes
Degree of Protection : IP22 (IP23, IP44, IP55 on request)
Sustained short circuit : 3 times at full load current

Number of poles : 4
Frames: 168 to 568
Powers : up to 4000kVA
Frequency : 50Hz to 60Hz
Power factor : 0.8 lagging
Low voltage : 110V to 690V
High voltage : 3300V to 13800V
Direction of rotation : CW from drive end
Harmonic distortion factor : < 3% for three-phase
Temperature rise Class : Standard Class H
Insulation Class : Standard Class H

Special Features

Higher motor starting capability • A reliable long life with superior Class H insulation • High thyristor load withstand capability for mobile phone and telecom applications • Ease of maintenance with integrated components and outboard exciter / rotating rectifier • Wide range of coupling discs/adaptor for single bearing configuration, suitable for wide range of engine brands.

Product Applications

Being a manufacturer SOLELY and EXCLUSIVELY concentrating in synchronous generators, this helps realize our ultimate goal in achieving the highest possible levels of specialization in terms of superior quality and positive service orientation. At the same time, it enables us to produce generators that cover a diverse range of general and specific applications.

Mainly in the application of diesel or gas generator groups, they are also able to operate with steam or hydraulic turbines. They operate in all configurations of emergency generator group, peak hours or continuous operation in the areas of :-

- *Industrial and Commercial complex*
- *Naval and Defense*
- *Telecommunication and Cell-phone towers*
- *Construction sites, Mining, Stone crushers and mixing plants*
- *Agriculture and Irrigation*
- *Hotels and Hospitals*
- *Rural areas and homes*
- *Trailer mounted mobile set for rental markets*
- *Airport and others*

Automatic Voltage Regulators

Developed to reach maximum performance due to the refined project and very strict component selection, the Automatic Voltage Regulators (AVR) are encapsulated and can withstand high vibration levels, and are installed in the main terminal box. Its superb performance is guaranteed in a variety of applications, being protected against dust, salt and sand.

EvoTec Automatic Voltage Regulators (AVR) are specially designed and catered for both single and parallel running operations for both self-excited and separately excited systems (PMG).

BASLER ELECTRIC of Illinois USA has entered into a special supply agreement with EvoTec for the supply of custom-made high quality and technologically advance voltage regulation and control system products for EvoTec high end generators.

Vacuum Pressure Impregnation

EvoTec generators are delivered with EvoTec insulation system. This insulation system is based on the "Vacuum Pressure Impregnation" (VPI) system which was developed in cooperation with the most renowned suppliers of insulation material all over the world. Using special epoxy based resin, this insulation systems ensures perfect winding insulation of the generators and does not emit harmful gases into the environment.

EvoTec VPI process has evidenced its efficiency and reliability in electrical rotating machines for a wide range of applications.

Quality and Certifications

EvoTec have reached the highest possible quality standards in every area of design, production and sales. With us, the pursuit of quality begins long before actual production with checks on semi-processed parts and sample tests on electronic components. Every quality mark is a guarantee of the painstaking assessment of prototypes and a commitment to continuous audits by external inspectors to monitor product consistency and product quality.

The quality assurance allows us to be proud of our products. Our products are now globally recognised. We are a professional and responsible company and understand that a good reputation breeds success. We also understand that our reputation depends on continually high standards of support whenever and wherever it is required.

Selection Guide

TCU168 – TCU568 Frame

8.5kVA – 3500kVA @ 50Hz at 1500rpm
10kVA – 4000kVA @ 60Hz at 1800rpm

STANDARD
EvoTec Power synchronous generators are designed and manufactured in compliance with IEC60034-1; IEC60034-22; GB755, BS4999-5000; NEMA MG 1.22, CE marking approved and are also accredited with ISO9001:2008 and ISO14001:2004.

DEGREE OF PROTECTION
The generators are mechanically protected against finger touch, solid foreign bodies of diameter over 12mm and against vertical water drops, that is, protection rate IP21 as per standard IEC 60034-5.

TERMINATION
Integral terminal box is provided for higher reliability. The top terminal box with side cable entry ensures wiring flexibility. Spacious terminal box accommodates all types, including aluminum cables.

WAVEFORMS
The generators are designed to give an excellent output waveform. The total harmonic content of line to line voltage waveform on no load is less than 5% as per the limits specified by IEC Standards.

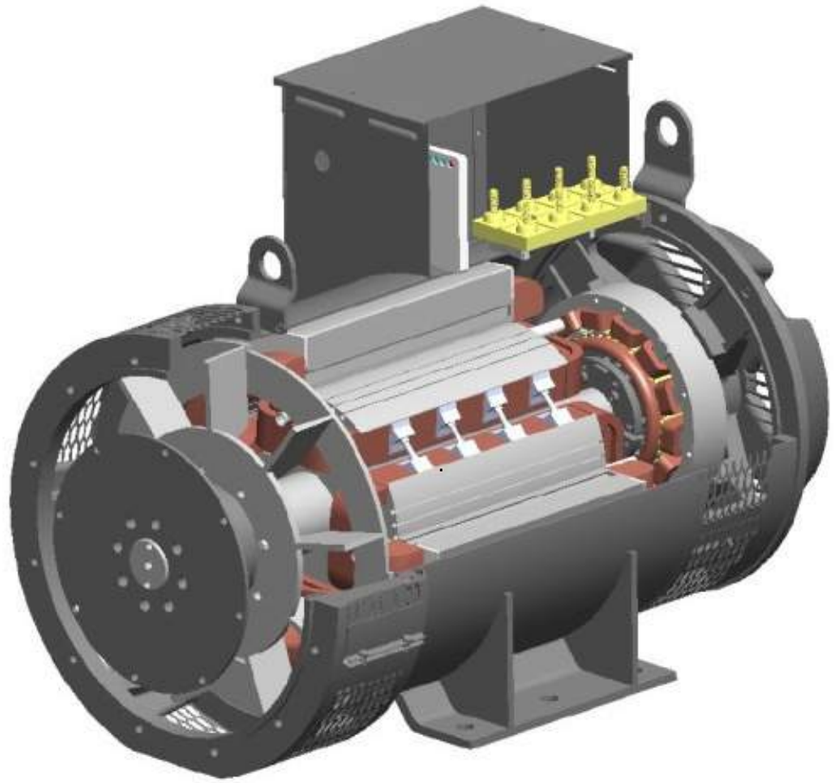
DYNAMIC BALANCING
The rotating part (rotor) is dynamically balanced with greater precision than that required by the standard IEC 60034-14 or ISO2372, ensuring minimum levels of residual unbalance.

VIBRATION AND NOISE
Advance machining with close tolerances and repeat accuracy for uniform air-gap and rotor dynamic balancing for low vibrations ensure efficient, smooth and silent performance

TRANSIENT RATINGS
Transient voltage drop due to application of full load at 0.8 power factor is less than 18% output voltage recovers to within 3% of the rated value in less than 0.3 seconds.

MANUAL VOLTGE REGULATION
EvoTec Power voltage regulators are equipped with an internal potentiometer with an adjustment regulation within +/-5% of the rated value. External potentiometer is available on request for possible remote voltage sensing.

OVERLOADS
The generators are capable of delivering an overload of 10% for 1 hour after 12 hours of running for Continuous Duty (S1). No overloads are allowed in Stand-by Duty.



BEARINGS
Bearings are dimensioned for heavy duty and generally oversized rolling bearings. All NDE bearings are pre-lubricated for life.

THREE PHASE SHORT CIRCUIT CURRENT
EvoTec Power generators ensured a three phase short-circuit current higher than 3 times the rated current (>300%In)

RADIO INTERFERENCE
The generators are having negligible Radio Frequency Interference and meets the general limits permitted by VDE 0875 (N).
TIF value is < 50 and THF value is < 2%.

PARALLEL OPERATION
All generators are suitable for parallel operation with similar generators, when equipped with the parallel unit.

ASYNCHRONOUS MOTOR STARTING DUTY
Generally, each kVA of generator is capable of starting 1 HP of induction motor.

VACUUM PRESSURE IMPREGNATION (VPI)
Developed with the latest technology, the impregnation system by continuous flow is normally used by EvoTec Power for low voltage winding, ensuring perfect insulation and protection.
Besides the impregnation, the static windings receive a protection coating as an additional protection against infiltration of humidity, dust, etc.
For bigger alternators, windings are impregnated with high quality material and using the latest Vacuum Pressure Impregnation (VPI)

ACCESSORIES / SPECIALTIES
Depending on the need or specification, accessories that allow greater flexibility in all application fields are optionally available, such as :

- *Temperature detector in the windings*
- *Temperature detector in the bearing*
- *Space heater (dehumidifiers)*
- *Current transformer*
- *Degree of Protection IP23, IP44 and IP54*
- *Separate auxiliary terminal box*
- *Inlet and outlet filter*

WINDING AND INSULATION SYSTEM
The armature coils of the stator main winding are made from dual coated, Class H copper wires, single/double layer concentric fractional pitched windings offers simplicity, reduced overhangs, neat look while reduce voltage distortion and superior capability to cope with non-linear loads.

VOLTAGE REGULATOR
The automatic voltage regulator (AVR) has a function called U/F which, when properly enabled, protects the alternator against operations below the rated speed, reducing the exciting current. A fuse installed in the terminal box or in the voltage regulator protects the generator against several abnormal situations during operation

Operation Characteristic

CONSTRUCTION
EvoTec generators are made according to the requirements of the standard IEC 60034-1.
Using the best quality standards during manufacturing, the result is safe operation and great durability.
Mounting styles normally supplied are :-

- *Single bearing with coupling by means of flanges and flexible disc*
- *Double bearing with coupling by means of flange*
- *Double bearing without flange*

EXCITATION SYSTEM
The generators are self-exciting, by means of a brushless type excitation system.
The voltage is maintained within +/- 0.5% of the nominal value in steady state condition with a balanced and non-distorting load.
As an added option, EvoTec Power alternators line allowed the use of an auxiliary exciter with permanent magnet (PMG)

INSULATION SYSTEM
The insulation system is Class H. All wound components are impregnated in an unsaturated polyester resin of 200 class temperature. The impregnation provides much needed rigidity and protection against the harsh environment, typical for the generators applications.
EvoTec Power generators are of 2/3 pitch winding to reduce the voltage harmonic content in applications with non-linear loads

SINGLE PHASE OPERATION
Three-phase (12 leads) wound generators can be re-connected and be de-rated by 33% for single phase usage. The following de-rating factors must be applied.

Connection	Star series	Delta series	Star parallel	Zig-zag
K Factor (L – L)	0.6	0.5	0.6	0.66
K Factor (L – N)	0.33	-	0.33	0.33

Operation Duty

Continuous Duty (ambient temperature 40°C)

The generator operates at rated power for an unlimited time with the possibility of overload up to 10% for 1 hour every 12 hours, without damage to its insulation system. The S1, also called Continuous or Prime duty is applied mainly where there is not another power source available, such as : groups for rent, groups for irrigation, refrigeration, co-generation and application for peak hours. For continuous duty, it is accepted a temperature raise in the windings of up to 125°C.

Stand-by duty (ambient temperature 40°C)

The generator group operates as energy backup with variable loads in emergency situations in places supplied by the grid / utility company or another main power source. In this kind of duty, the machine does not accept overloads and operates with variable loads up to the rated power of the stand-by duty (40°C). A raise in the winding temperature of up to 150°C is accepted (as per standard of IEC 60034). However, if that happens, the useful life of the generator reduces 2 to 6 times. The use of the generator in standby-duty is limited to 500 hours a year.

Stand-by duty (ambient temperature 27°C)

This condition is similar to the previous one; however, the maximum ambient temperature accepted is 27°C. In this duty, the alternator can provide more power and a temperature raise of 163°C is accepted. The main application is in the emergency operation where the ambient temperature will not exceed 27°C with limitation of 300 hour a year.

Operating Conditions

Altitude

The rated power refers to installations up to 1000 meter above sea level. For applications over this altitude, the following power correction factor must be applied.

Altitude (m.a.s.l)	<1000	<1500	<2000	<2500	<3000	<3500
K Factor	1	0.96	0.93	0.90	0.86	refer

Ambient Temperature

The rated powers refer to installation with ambient temperature of 40°C. For applications different from 40°C, the following power correction factor must be applied.

Ambient Temperature	30°C	35°C	40°C	45°C	50°C	55°C
K Factor	1.04	1.00	1.00	0.96	0.93	0.90

Power factor

The nominal power factor is 0.8 lagging. For application with power factor value different from 0.8, the following correction factor must be applied.

Power Factor	0.8	0.7	0.6	0.5	0.3	0
K Factor	1.00	0.93	0.88	0.84	0.82	0.8

Power variation according to temperature & altitude

For applications with ambient temperature different from 40°C and altitude more than 1000 m.a.s.l, the following power correction factor must be applied.

Altitude (m.a.s.l)	25°C	40°C	45°C	50°C	55°C
< 1000	1.09	1.00	0.96	0.93	0.91
1000 - 1500	1.01	0.96	0.92	0.89	0.87
1500 - 2000	0.96	0.91	0.87	0.84	0

EvoTec TCU Series

4 Pole Synchronous Generators

Low Voltage Application - 50Hz & 60Hz

Dont Compromised. Cross over to EVOTEC POWER

Model	Leads	kVA / kW @ Temperature Rise / Ambient Temperature (125°C / 40°C)						Single Bearing Weight
		Continuous Duty 50Hz / 1500rpm		Efficiency at full load	Continuous Duty 60Hz / 1800rpm		Efficiency at full load	
		400V		pf : 0.8	440V		pf : 0.8	
		kVA	kW	%	kVA	kW	%	kgs
TCU188A	12	20	16	82.6	22.5	18.0	82.3	141
TCU188B	12	22.5	18	83.5	25.6	20.5	83.2	148
TCU188C	12	25	20	84.4	28.8	23.0	84.4	153
TCU188CS	12	27.5	22	84.4	31.0	25.0	84.4	157
TCU188D	12	31.3	25	85.6	36.0	29.0	85.6	165
TCU188DS	12	37.5	30	86	42.5	34.0	86	180
TCU188E	12	40	32	87	45.6	36.5	87.2	186
TCU188F	12	42.5	34	87.3	49.0	39.0	87.4	196
TCU228A	12	45	36	86.9	52.5	42.0	87.3	258
TCU228B	12	50	40	87.1	57.5	46.0	87.3	261
TCU228C	12	62.5	50	88.3	72.5	58.0	88.5	282
TCU228D	12	70	56	88.6	81.0	65.0	89	310
TCU228E	12	75	60	89	87.5	70	89.3	312
TCU228F	12	80	64	89.1	92.5	74	89.5	315
TCU228G	12	90	72	89.2	104	83	89.7	335
TCU228H	12	100	80	90.1	115	92	90.6	350
TCU228J	12	113	90	90.3	131	105	90.8	374
TCU228K	12	125	100	91	145	116	91.5	396
TCU228L	12	140	112	91.1	160	128	91.6	418
TCU228M	12	150	120	91.4	173	138	91.7	425
TCU228N	12	160	128	91.5	184	147	91.8	450
TCU288A	12	165	132	91.6	191	153	91.4	555
TCU288B	12	181	145	92.1	210	168	92.2	587
TCU288C	12	188	150	92.3	215	172	92.3	590
TCU288D	12	202	161	92.4	231	185	92.5	634
TCU288E	12	225	180	92.9	260	208	93	662
TCU288F	12	250	200	93	287	230	93.2	727
TCU288G	12	281	225	93.1	325	260	93.3	730
TCU288H	12	300	240	93.2	348	278	93.5	756
TCU288J	12	315	252	93.5	363	290	93.6	803
TCU288K	12	325	260	93.6	375	300	93.6	805
TCU318A	12	350	280	93.5	406	325	93.3	940
TCU318B	12	381	305	93.7	444	355	93.6	989
TCU318C	12	403	322	93.7	469	375	93.7	1068
TCU318D	12	450	360	94	525	420	94	1131
TCU368A	12	500	400	93.9	581	465	94	1212
TCU368B	12	562.5	450	94	663	530	94.1	1312
TCU368C	12	600	480	94.2	700	560	94.1	1350
TCU368D	12	625	500	94.3	725	580	94.3	1373
TCU368E	12	675	540	94.4	788	630	94.3	1458
TCU368F	12	700	560	94.4	812	650	94.4	1482
TCU368G	12	750	600	94.7	875	700	94.7	1552
TCU428A	6	800	640	94.8	938	750	94.8	1792
TCU428B	6	913	730	94.9	1063	850	95	1868
TCU428C	6	1000	800	95.1	1163	930	95.2	2002
TCU428D	6	1150	920	95.3	1313	1050	95.5	2248
TCU428E	6	1250	1000	95.5	1450	1160	95.6	2552
TCU428F	6	1400	1120	95.6	1625	1300	95.6	2720
TCU468A	6	1500	1200	95.8	1750	1400	95.8	3005
TCU468B	6	1650	1320	95.9	1875	1500	96	3250
TCU468C	6	1900	1520	96	2188	1750	96.1	3533
TCU468D	6	2000	1600	96.1	2313	1850	96.2	3740
TCU468E	6	2150	1720	96.1	2500	2000	96.2	3985
TCU468F	6	2250	1800	96.2	2563	2050	96.3	4150
TCU528A	6	2500	2000	96.1	2875	2300	96.2	4287
TCU528B	6	2750	2200	96.3	3150	2520	96.4	4700
TCU568A	6	3000	2400	96.5	3438	2750	96.6	4980
TCU568B	6	3300	2640	96.6	3775	3020	96.6	5195
TCU568C	6	3500	2800	96.6	4000	3200	96.7	5320

EvoTec TH Series

4 Pole Synchronous Generators

Medium and High Voltage Application - 50Hz & 60Hz

Model	10500V - 50Hz at 1500rpm				
	105/40°C		125/40°C		Weight
	kW	kVA	kW	kVA	kg
TH468B	400	500	440	550	3100
TH468C	500	625	550	688	3300
TH468D	600	750	660	825	3500
TH468E	700	875	770	963	4150
TH528B	800	1000	880	1100	4800
TH528C	900	1125	990	1238	4800
TH528D	1000	1250	1100	1375	5050
TH568B	1200	1500	1320	1650	5950
TH568C	1300	1625	1430	1788	6100
TH568D	1400	1750	1540	1925	6950
TH568E	1500	1875	1650	2063	7100
TH568F	1600	2000	1760	2200	7500
TH568G	1800	2250	1980	2475	8000
TH568H	2000	2500	2200	2750	8100
TH638B	2200	2750	2420	3025	7550
TH638C	2400	3000	2640	3300	7950
TH638D	2600	3250	2860	3575	8200
TH638E	2800	3500	3080	3850	8700

Model	13800V - 60Hz at 1800rpm				
	105/40°C		125/40°C		Weight
	kW	kVA	kW	kVA	kg
TH468B	480	600	528	660	3200
TH468C	600	750	660	825	3300
TH468D	710	888	781	976	3600
TH468E	860	1075	946	1183	4300
TH528B	1000	1250	1100	1375	4900
TH528C	1100	1375	1210	1513	4900
TH528D	1200	1500	1320	1650	5200
TH568B	1450	1812	1595	1994	5500
TH568C	1600	2000	1760	2200	5600
TH568D	1700	2125	1870	2338	6400
TH568E	1800	2250	1980	2475	6500
TH568F	1920	2400	2112	2640	6800
TH568G	2200	2750	2420	3025	7300
TH568H	2400	3000	2640	3300	7400
TH638B	2600	3250	2860	3575	7700
TH638C	2900	3625	3190	3988	8100
TH638D	3100	3875	3410	4263	8300
TH638E	3300	4125	3630	4538	8800

Model	6300V - 50Hz at 1500rpm				
	105/40°C		125/40°C		Weight
	kW	kVA	kW	kVA	kg
TH468B	400	500	440	550	2950
TH468C	500	625	550	688	3200
TH468D	600	750	660	825	3350
TH468E	700	875	770	963	4050
TH528B	800	1000	880	1100	4720
TH528C	900	1125	990	1238	4600
TH528D	1000	1250	1100	1375	4850
TH568B	1200	1500	1320	1650	5150
TH568C	1300	1625	1430	1788	5200
TH568D	1400	1750	1540	1925	6050
TH568E	1500	1875	1650	2063	6150
TH568F	1600	2000	1760	2200	6500
TH568G	1800	2250	1980	2475	6950
TH568H	2000	2500	2200	2750	7100
TH638B	2200	2750	2420	3025	7300
TH638C	2400	3000	2640	3300	7750
TH638D	2600	3250	2860	3575	8050
TH638E	2800	3500	3080	3850	8550

Model	7200V - 60Hz at 1800rpm				
	105/40°C		125/40°C		Weight
	kW	kVA	kW	kVA	kg
TH468B	440	550	484	605	2950
TH468C	540	675	594	688	3200
TH468D	670	838	737	921	3350
TH468E	770	963	847	963	4050
TH528B	870	1088	957	1196	4720
TH528C	980	1225	1078	1238	4600
TH528D	1100	1375	1210	1513	4850
TH568B	1320	1650	1452	1815	5150
TH568C	1430	1788	1573	1788	5200
TH568D	1520	1900	1672	2090	6050
TH568E	1640	2050	1804	2063	6150
TH568F	1750	2188	1925	2406	6500
TH568G	2000	2500	2200	2750	6950
TH568H	2200	2750	2420	3025	7100
TH638B	2400	3000	2640	3300	7300
TH638C	2650	3312	2915	3644	7750
TH638D	2900	3625	3190	3988	8050
TH638E	3100	3875	3410	4263	8550

Model	3300V - 50Hz at 1500rpm				
	105/40°C		125/40°C		Weight
	kW	kVA	kW	kVA	kg
TH468B	400	500	440	550	3050
TH468C	500	625	550	688	3160
TH468D	600	750	660	825	3420
TH468E	700	875	770	963	4050
TH528B	800	1000	880	1100	4650
TH528C	900	1125	990	1238	4750
TH528D	1000	1250	1100	1375	4950
TH568B	1200	1500	1320	1650	5200
TH568C	1300	1625	1430	1788	6100
TH568D	1400	1750	1540	1925	6150
TH568E	1500	1875	1650	2063	6600
TH568F	1600	2000	1760	2200	7100
TH568G	1800	2250	1980	2475	7200
TH568H	2000	2500	2200	2750	7450
TH638B	2200	2750	2420	3025	7800
TH638C	2400	3000	2640	3300	7950
TH638D	2600	3250	2860	3575	8450
TH638E	2800	3500	3080	3850	8700

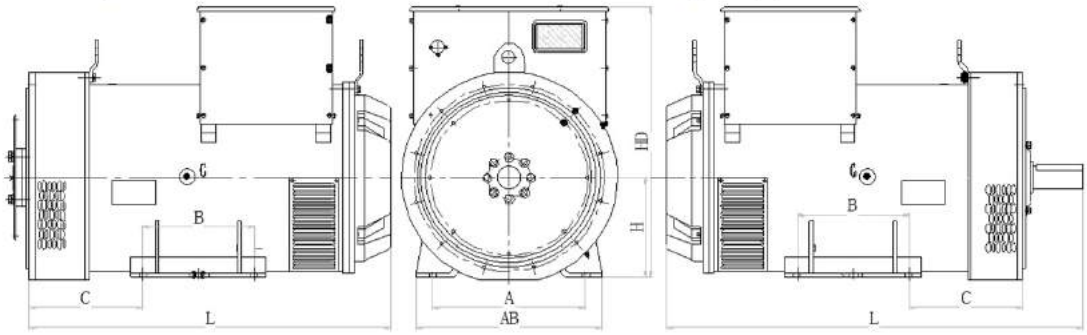
Model	3300V - 60Hz at 1800rpm				
	105/40°C		125/40°C		Weight
	kW	kVA	kW	kVA	kg
TH468B	480	600	528	660	3050
TH468C	600	750	660	688	3160
TH468D	730	912	803	1004	3420
TH468E	840	1050	924	963	4050
TH528B	980	1225	1078	1348	4650
TH528C	1100	1375	1210	1238	4750
TH528D	1200	1500	1320	1650	4950
TH568B	1430	1788	1573	1966	5200
TH568C	1560	1950	1716	2145	6100
TH568D	1700	2125	1870	2063	6150
TH568E	1800	2250	1980	2475	6600
TH568F	2000	2500	2200	2750	7100
TH568G	2200	2750	2420	3025	7200
TH568H	2400	3000	2640	3300	7450
TH638B	2650	3312	2915	3644	7800
TH638C	2880	3600	3168	3960	7950
TH638D	3100	3875	3410	4263	8450
TH638E	3340	4175	3674	4593	8700

Experience the Ultimate - Authentic and Supreme - **EVOTEC POWER**

Dimensions

EVOTEC POWER - Designd and Planned to please generations.

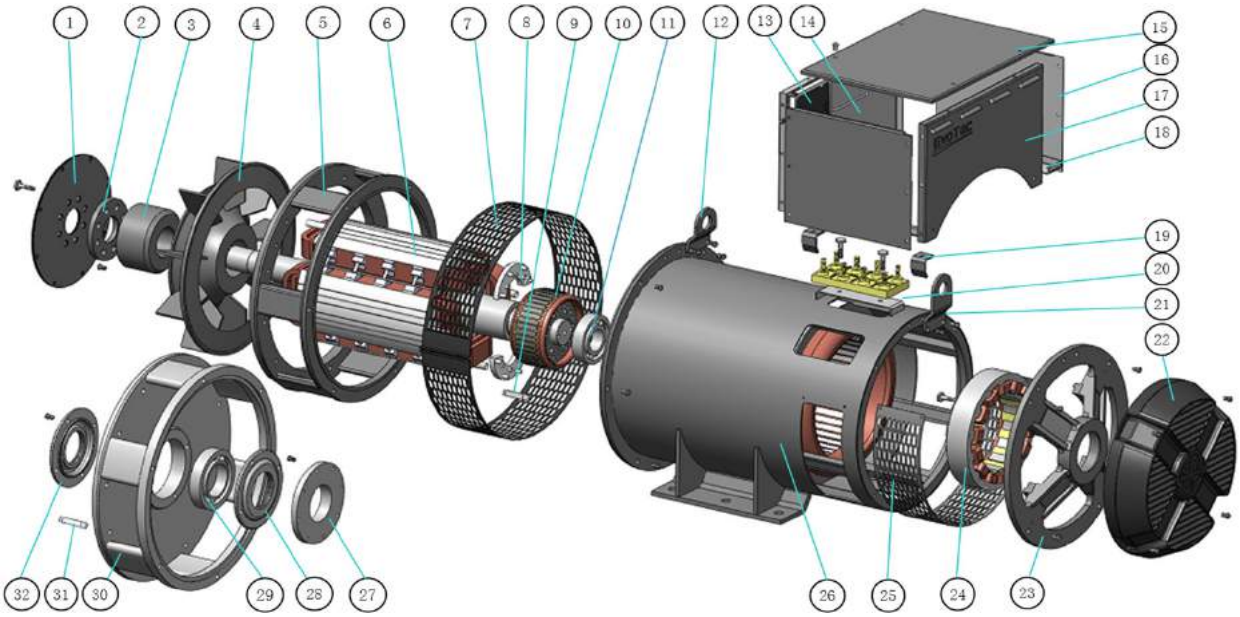
4 Pole Synchronous Generators - Low Voltage Application



Model	Power Rating		Voltage	Single Bearing		Single and Double Bearing Configuration					Double Bearing	
	KW	KVA	V	L	C	HD	H	AB	A	B	L	C
TCU188A	16	20	400	462	238	538	180	332	279	/	602	238
TCU188B	18	22.5	400									
TCU188C	20	25	400	471							611	
TCU188CS	22	27.5	400									
TCU188D	25	31.3	400	503							643	
TCU188DS	30	37.5	400	552							692	
TCU188E	32	40	400									
TCU188F	34	42.5	400	564							704	
TCU228A	36	45	400	681	257.5	690	225	438	356	150	857	257.5
TCU228B	40	50	400									
TCU228C	50	62.5	400	705							881	
TCU228D	56	70	400									
TCU228E	60	75	400	738							914	
TCU228F	64	80	400									
TCU228G	72	90	400	766							942	
TCU228H	80	100	400	808	300	735	270	466	406	210	984	300
TCU228J	90	113	400	808								
TCU228K	100	125	400	831							1007	
TCU228L	112	140	400	898							1074	
TCU228M	120	150	400	898								
TCU228N	128	160	400	919							1095	
TCU288A	132	165	400	871	290	780	270	505	406	230	1049	290
TCU288B	145	181	400									
TCU288C	150	188	400									
TCU288D	161	202	400									
TCU288E	180	225	400	926							1104	
TCU288F	200	250	400									
TCU288G	225	281	400	1020	232	790	280	568	508	457	1198	232
TCU288H	240	300	400									
TCU288J	252	315	400									
TCU288K	260	325	400									
TCU318A	280	350	400	1057	232	853	315	598	508	457	1273	232
TCU318B	305	381	400									
TCU318C	322	403	400	1147							1363	
TCU318D	360	450	400									
TCU368A	400	500	400	1177	297	957	355	690	610	500	1382	297
TCU368B	450	562.5	400									
TCU368C	480	600	400									
TCU368D	500	625	400									
TCU368E	540	675	400	1267							1472	
TCU368F	560	700	400									
TCU368G	600	750	400									
TCU428A	640	800	400	1357	350	1075	400	768	685	560	1623	350
TCU428B	730	913	400									
TCU428C	800	1000	400									
TCU428D	920	1150	400	1432							1698	
TCU428E	1000	1250	400	1577							1813	
TCU428F	1120	1400	400									
TCU468A	1200	1500	400	1600	365	1230	450	890	750	630	1874	365
TCU468B	1320	1650	400									
TCU468C	1520	1900	400	1750							1960	
TCU468D	1600	2000	400									
TCU468E	1720	2150	400	1865						800	2139	
TCU468F	1800	2250	400							800		
TCU528A	2000	2500	400	1832	425	1380	500	1020	900	730	2150	425
TCU528B	2200	2750	400									
TCU568A	2400	3000	400	1706	516	1375	560	123	974	560	1977	516
TCU568B	2640	3300	400	1756						560	2027	
TCU568C	2800	3500	400	1789						560	2060	

Components Description

Structural Drawing



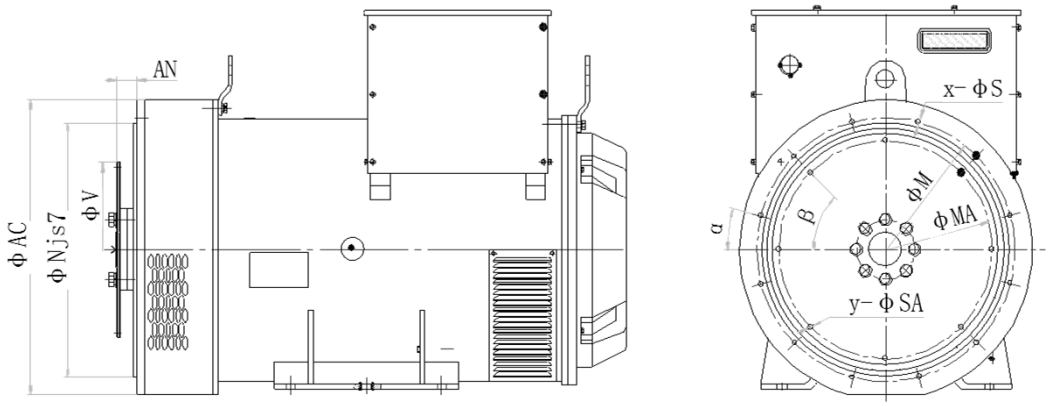
Code	Quantity	Description
1	3	Flexible Coupling Disc
2	1	Adjusting Shim
3	1	Fan hub
4	1	Fan assembly
5	1	Adaptor Flange
6	1	Main Rotor
7	1	D-end Screen Protective
8	1	Rotating Rectifier
9	1	Shaft Key
10	1	Exciter Rotor
11	1	N-end Bearing
12	1	Lifting Plate - Front
13	1	Automatic Voltage Regulator
14	2	Terminal Box - Front Plate
15	1	Terminal Box - Top Plate
16	2	Terminal Box - Side Plate

Code	Quantity	Description
17	1	Terminal Box - Back Plate
18	2	Support Plate
19	4	Support Bracket
20	1	Terminal Board Support
21	1	Lifting Plate - Back
22	1	End Shutter cover
23	1	End Shield
24	1	Exciter Stator
25	1	N-end Screen Protective
26	1	Main Stator
27	1	Fan Support
28	1	Bearing Cover - Inside
29	1	D-end Bearing
30	1	Adaptor Flange
31	1	Shaft Key
32	1	Bearing Cover - Outside

4 Poles Synchronous Generators

Low Voltage Industrial Applications

Flange & Coupling Type



SAE	COUPLING					
	ΦV	ΦMA	AN	y	ΦSA	α
6.5	215. 8	200	30.16	6	9	30
7.5	241. 2	222.25	30.16	8	9	22.5
8	263. 4	244.48	61.9	6	11	30
10	314. 2	295.28	53.98	8	11	22.5
11.5	352.3	333.38	39.68	8	11	22.5
14	466.6	438.15	25.4	8	13	22.5
18	571.4	542.92	15.7	12	17	15
21	673	641.4	0	12	17	15
24	733.3	692.1	0	12	21	15

SAE	ADAPTOR					
	ΦAC	ΦN	ΦM	x	ΦS	β
00	882, 1088	787.4	850.9	16	16, 14	11.25°
0	711, 740, 882, 1088	647.7	679.5	16	13.5, 14	11.25°
0.5	650, 662, 740, 882	584.2	619.13	12	13.5, 14	15°
1	559, 602, 662, 740, 882	511.18	530.23	12	11.5, 12.5, 14	15°
2	491, 512, 602, 662	447.68	466.73	12	11.5	15°
3	458, 512, 602, 662	409.571	428.63	12	11.5	15°
4	408, 512	361.96	381	12	11.5	15°
5	408	314.36	333.38	8	11.5	22.5°
6	408	266.7	285.8	8	11.5	22.5°

Standard Construction Type

ADAPTOR	COUPLING																												
	TCU SERIES																												
	188					228				288				318					368			428				468		528		568
	6	5	4	3	2	4	3	2	1	3	2	1	0.5	3	2	1	0.5	0	1	0.5	0	1	0.5	0	00	0	00	0	00	00
6.5	●	●	●																											
7.5		●	●																											
8		o	●	●																										
10			●	●	●	●	●	●																						
11.5				o			o	o	●	o	●	●		●	●	●														
14												o	●			o	●	●	o	●	●	●	●	●		●				
18																		●			●			o	●	●	●	●	●	•
21																											●	o	●	o
24																											●			•

● Available o Common

Generator Accessories and Options

Space heaters 220V	3 CTs on neutral	IM B5 adaptor
Thermistors PTC	Single phase winding	IP 55 terminal box
RTD PT100 (in slot or in end coil)	Degree of protection	Inlet air filter
RTD PT100 (on bearing)	Separate auxiliary terminal box	Inlet and outlet air filter
Special impregnation for harsh environment	Power factor Controller	Special painting cycle
Special voltage	Remote voltage trimmer and CT	Special packing (wood cage)

After Sales Support

Technical Assistance

EvoTec Power offers its customers technical assistance services for all the pre-sales to post-sales support. Those services include support to general questions and service in the field, including diagnostics, machine commissioning and operation. The manuals supplied with the equipment provide fast and precise information regarding safety instructions, installation and maintenance. The technical assistance offers a quality and experience team, able to perform in different situation in the field, using state-of-art equipment, providing reliability to the results.

Limited Warranty

EvoTec Power warrants its products against defects in material and workmanship for a period of 24 months from the issue date of the factory invoice or Bill of Lading's date. We confirm that warranty is directed to the only EvoTec Power customers to which we respond. In case of products purchased through retailers/ distributors / generator set OEMs, the warranty will be of 12 months from the date of the retailers/distributors/generator set OEMs, limiting to 24 months from the manufacturing date.

Within the mentioned terms, EvoTec Power engages itself to supply free of charge those spare-parts that, according to its judgment or to the one of an authorized representative, appear with manufacturing or material defects or, always to its judgment, to directly or through an authorized center carry out the repairing without undertaking the transport costs.

We anyhow exclude from our responsibility or obligation for other costs, damages and direct or indirect loss caused by the total or partial usage or impossible usage of the products. The repairing or the substitute will not extend or renew the warranty duration. Warranty will not be granted; whenever breakdowns or problems may appear because of lack of experience, usage over the nominal performances, if the product has been modified or should return incomplete, disassembled or with modified nameplate data.

Parts and Components

To serve the customer and the technical assistance, EvoTec Power has a part and component sales force that operates nationwide.

EvoTec

Affordable World-Class Quality
Innovative Generators for Various Environments

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