GNT SERIES **GNT 610 & 680P**





231/400V - 50Hz & 277/480V - 60Hz





Features and Benefits

- Half Century Experience in Generator Manufacturing
- Diesel Engines with Advanced Technology and Quality
- Alternators with Advanced Technology and Quality
- Control Panel Suitable for Flexible Application
- High Quality and Reliable Technology
- Patented Compact Designed and Soundproof Canopy
- Suitable for Heavy-Duty
- Durability
- Wide Range of Affordable Spare Parts

- Low Noise Level
- Low Exhaust Emission
- Low Operating Cost
- Low Fuel Consumption
- Low Oil Consumption
- Tropical 50°C Radiator
- Fuel Filter with Water and Particle Separator
- First Class Product Support
- Global Technical Service and Maintenance Support

	Generator General Information													
Generator	Frequency	Voltage	Power Factor	Speed		Diesel Engine			Alternat	or	Type of	Gen	erator Ou	tput
Model	Hz	V	CosQ	rpm	Brand	Model	Series	Brand	Model	Series	Operation	kVA	kW	Α
GNT 610	50	231/400	0,8	1500	I N T	E765TDI	PII	G E N P	G	355S1	Stand By Prime Continuous	610,0 554,5 388,2	488,0 443,6 310,5	881,5 801,4 561,0
GNT 680	60	277/480	0,8	1800	E R		1211	O W E R	N P	315L	Stand By Prime Continuous	680,0 618,2 432,7	544,0 494,5 346,2	982,7 893,3 625,3

INTER Diesel Engine Technical Parameters and Matching Parameters

Diesel Engine Main Technical Parameters

General		
Number of Cylinders		8
Configuration		V - Type
Aspiration		Turbocharged & Intercooled
Combustion System		Direct Injection
Compression Ratio		15,5:1
Bore	mm	128
Stroke	mm	155
Displacement	L	15,948
Governing Type		Electronic
Governing Class		G3
Rotation		Counterclockwise
Firing Order		1-5-7-2-6-3-4-8
Emission		Tier II
Moments of Rotation Inertia		
Engine	kg • m²	4,54
Flywheel	kg • m²	2,1
Performance Rating		
Speed Droop	%	≤0,5
Steady State Speed Band	%	≤0.5
Test Conditions		
Ambient Temperature	%	25
Atmospheric Pressure	kPa	100
Relative Humidity	RH (%)	30
Max. Operating Intake Resistance	kPa	<5
Exhaust Backpressure Limit	kPa	<10
Fuel Temperature (Fuel Inlet Pump)	°C	38 ± 2
Filters		
Air Filter		Dry Type, Replaceable
Fuel Filter		With Water Seperator
Oil Filter		Element Type, Particulate Trap
Flywhell Housing and Flex Coupling		,
Flywheel Housing	SAE (J620)	1
Flex Coupling Disc	Inch (")	14
Overall Dimensions		
Length *	mm	1745
Width	mm	1380
Height	mm	1400
Dry Weight	Kg	1400
* From front end of radiator to rear end of air filter	ū	

Cooming	System
Radiator T	vpe

Cooling System		
Radiator Type	50°C	Tropical
Total Coolant Capacity	L	80
Max. Perm. Coolant Outlet Temperature	°C	105
Max. Perm. Flow Resis. (Cool. System And Piping)	bar	0,5
Max.Temperature of Coolant Warning	°C	95
Max. Temperature of Coolant Shutdown	°C	98
Thermostat Operation Temperature - Initial Open	°C	68
Thermostat Operation Temperature - Full Open	°C	71
Delivery of Coolant Pump	m ³/ h	5,60
Min. Pressure Before Coolant Pump	bar	0,5
Radiator Face Area	m²	1,39
Rows	Row	5
Matrix Density	Per / Inch	15,5
Material		Aluminum
Width of Matrix	mm	1162
Height of Matrix	mm	1196
Pressure Cap Setting	kPa	70
Estimated Cooling Air Flow Reserve	kPa	0,15
Engine Pre Heater Tube (with Circulation Pump)	W	3000
Lubrication System		
Total System	L	28
Minimum Oil Level	L	19
Nominal Motor Operating Temperature	°C	40
Lubricating Oil Pressure (Rated Speed)	bar	5
Relief Valve Opens	kPa	200
Oil / Fuel Consumption Ratio	%	≤0,5
Normal Oil Temperature	°C	110
Electrical System		
Voltage	V	24
Starter	kW	7
Alternator Output Ampers	Α	45
Alternator Output Voltage	V	28
Batteries Capacity	Ah	2X135
Fan		
Diameter	mm	900
Drive Ratio		1,15:1
Number of Blades		7
Material		Plastic
Туре		Blowing

GNT SERIES GNT 610 & 680P





231/400V - 50Hz & 277/480V - 60Hz

Diesel Engine Matching Parameters

50 Hz @ 1500 r/min		Stand By	Prime
Gross Engine Power	kW	554,1	504,7
Net Engine Power	kW	529,4	481,0
Fan Power Consumption (Belt Pulley Driven)	kW	22,0	22,0
Other Power Loss	kW	2,0	1,5
Mean Effective Pressure	MPa	3,53	3,21
Intake Air Flow	m 3 / min	39,66	37,77
Exhaust Temperature Limit	°C	690	690
Exhaust Flow	m 3 / min	72,77	69,30
Boost Pressure Ratio		3,50	3,30
Mean Piston Speed	m/s	8,5	8,5
Cooling Fan Air Flow	m 3 / min	809,6	809,6
Typical Generator Output Power	kVA	610	554
Heat Rejection			
Energy in Fuel (Heat of Combustion)	kW	1385,4	1261,8
Gross Heat to Power	kW	554,1	504,7
Energy to Coolant and Lubricating Oil	kW	277,1	252,4
Heat Dissipation Capacity*	kW	96,8	88,6
Energy to Exhaust	kW	401,8	365,7
Heat to Radiation	kW	55,6	50,5
*Intake Intercooled System			

60 Hz @ 1800 r/min		Stand By	Prime
Gross Engine Power	kW	591,8	539,0
Net Engine Power	kW	560,6	508,3
Fan Power Consumption (Belt Pulley Driven)	kW	26,4	26,4
Other Power Loss	kW	2,0	1,5
Mean Effective Pressure	MPa	2,94	2,68
Intake Air Flow	m 3 / min	39,66	37,77
Exhaust Temperature Limit	°C	670	670
Exhaust Flow	m 3 / min	72,77	69,30
Boost Pressure Ratio		3,50	3,30
Mean Piston Speed	m/s	10,2	10,2
Cooling Fan Air Flow	m ³ / min	809,6	809,6
Typical Generator Output Power	kVA	671	609
Heat Rejection			
Energy in Fuel (Heat of Combustion)	kW	1387,4	1237,0
Gross Heat to Power	kW	554,1	477,9
Energy to Coolant and Lubricating Oil	kW	277,1	252,4
Heat Dissipation Capacity*	kW	96,8	87,6
Energy to Exhaust	kW	401,7	365,7
Heat to Radiation	kW	57,7	52,5
*Intake Intercooled System			

GENPOWER Alternator Technical Parameters and Specifications

Alternator Technical Parameters

Insulation Class		Н
Winding Pitch		2/3 - (N° 6)
Wires		12
Protection		IP 23
Altitude	m	1000
Overspeed	rpm	2250
Air Flow	m³/sec	1,035
Bearing Drive	N/A	-
Rotor Winding	100%	Copper

F: 110 1 10 1		0 15 11 1
Field Control System		Self Excited
A.V.R. Model	Standard	SX440
Voltage Regulation	%	± 1
Sustained Short-Circuit Current	10 sec	300% (3 IN)
Total Harmonic (*) TGH / THC	%	< 4
Wave Form :NEMA = TIF - (*)		< 50
Wave Form :I.E.C. = THF - (*)	%	< 2
Bearing Non - Drive	Bearing	6314-2RZ
Stator Winding	100%	Copper

(*) Total harmonic content line to line, at no load or full rated linear and balanced load

Genpower sychron alternators are produced according to TSE 60034-1; IEC 60034-22; GB755; BS4999-5000; NEMA MG 1.22 standards

Alternator Specifications

50 Hz - 231/400V - Cos Q 0,8 - 1500 rpm									
Standard Using Alternator Optional Using Alternator									
Brand/Model	Genpower	355 S 1		Leroy Somer	TAL047E		Stamford	S5L1D-D	
Duty			Contin	uous		Stand By			
Ambient	C°		40°	C		27°C			
Class/Temp. Rise	C°		H / 12	5° K		H / 163° K			
Series Star (V)	V	380/220	400/231	415/240	1 Phase	380/220	400/231	415/240	1 Phase
Parallel Star (V)	V	190/110	200/115	208/120	220	190/110	200/115	208/120	220
Series Delta (V)	V	220	230	240	230	220	230	240	230
Output Power	kVA	555,0	555,0	576,0	-	610,0	610,0	633,0	-
Output Power	kW	444,0	444,0	460,8	-	488,0	488,0	506,4	-

	60 Hz - 277/480V - Cos Q 0,8 - 1800 rpm								
Standard Using Alternator Optional Using Alternator									
Brand/Model	Genpower	315L		Leroy Somer	TAL047C		Stamford	HC5C	
Duty			Contin	nuous		Stand By			
Ambient	C°		40°	°C		27°C			
Class/Temp. Rise	C°		H / 12	25° K			H / 163° K		
Series Star (V)	V	416/240	440/254	480/277	1 Phase	416/240	440/254	480/277	1 Phase
Parallel Star (V)	V	208/120	220/127	240/138	-	208/120	220/127	240/138	-
Series Delta (V)	V	240	254	277	240	240	254	277	240
Output Power	kVA	580,0	611,0	643,0	-	638,0	672,0	707,0	-
Output Power	kW	464,0	488,8	514,4	-	510,4	537,6	565,6	-







231/400V - 50Hz & 277/480V - 60Hz

Control Panel Specifications

Powder Painted Steel Pannel with Lockable Door ATS (Automatic Transfer Panel) - Optional Control Module Battery Charger Emergency Stop Button Backlit, 128x64 Pixels Control Relays
Terminal Blocks
Load Output Terminal

System Protection MCBs Circuit Breaker - Optional LCD Screen

Control Module Technical Parameters

Brand
Dimensions
Weight
Ambient Humidity
DC Battery Supply Voltage
Network Frequency
Generator Voltage Measurement
Current Transformer Secondary
Charge Alternator Voltage Measurement
Communication Interface
Generator Contactor Relay Output

Current Transformer Secondary
Charge Alternator Voltage Measurement
Communication Interface
Generator Contactor Relay Output
Solenoid Transistor Outputs
Configurable-3 Transistor Outputs

GENPOWER/Fortrust JV 221mm x 156mm x 56,8mm

800 gr.
90% max.
8 - 32 V
5 - 99,9 Hz
3 - 300 V
5A
8 - 32 V
RS-232
5A & 250V
1A with DC Supply

 Model
 6120 D Version

 Protection Class
 IP65 From the Front

 Environmental Conditions
 2000 Meters Above Sea Level

 Ambient Temperature
 -20 ° C to + 70 ° C

 Battery Voltage Measurement
 8 - 32 V

 Mains Voltage Measurement
 3 - 300 V Phase-Neutral, 5 - 99.9 Hz

 Generator Frequency
 5 - 99.9 Hz

Working Period Continuous

Charge Alternator Excitation 210mA & 12V, 105mA & 24V Nominal 2.5W

Analog Sender Measurement 0 - 1300ohm

Mains Contactor Relay Output 5A & 250V

Start Transistor Outputs 1A with DC Supply

Configurable 4 Transistor Outputs 1A with DC Supply

Control Module Functions

Mains Voltage Level Control
Network Frequency Level Control
Engine Operating Option Control
Engine Stop Option Control
Engine Speed (RPM) Level Control
Battery Voltage Options Control
Check Engine Maintenance Times
Communication Interfaces GPRS, GSM

Engine Speed Voltage Generator Voltage Level Control Generator Frequency Level Control Generator Current Level Control Generator Power Level Control

Generator Work Schedule and Timing Control
Oil Pressure Controllers Control

Oil Pressure Controllers Control
Configurable Analog Inputs and Outputs
Keeping Error Records of Past Events

Configurable Programmable Digital Inputs and Outputs

Current and Frequency

3 phase Generator Protections

- High / Low Voltage - High / Low Frequency

- Current / Voltage Asymmetry

- Overcurrent / Overload

Overheat Control

1 Phase or 3 Phase, Phase Selection Parameter Setting via Control Module

Water Temperature Phase Sequence 3 phase AMF Function

- High / Low Frequency

- High / Low Voltage

- High / Low Water Temperature

- High / Low Load

Mains, Generator ATS control Network, Voltage, Frequency Display Parameter Setting via Computer

Hours of Operation

Alarm Horn

Heater Tube Thermostat Control

Modbus and SNMP Working Hour Ground Leakage

Analog Modem Ethernet, USB, RS232, RS485

Selectable Protection Alarm / Shutdown Battery Voltage

Battery Voltage Oil Pressure

Control Module Alerts

Emergency Stop Malfunction High Generator Voltage Low Generator Frequency Low Load

Over Current Unbalanced Current Low Generator Voltage High Generator Frequency Phase Sequence Error

Overload

Low Water Level (Optional) Low Oil Pressure Low Water Temperature
Heat Sensor Broken
Reverse Power
Start Error
Stop Error

Magnetic Pickup Error

Charge Alternator Error Unbalanced Load Maintenance Time Alarm Low Speed High Speed

Broken Oil Sensor Cable

High Oil Temperature (Optional) Low Fuel Level (Optional) High Battery Voltage Low Battery Voltage High Water Temperature Electronic Canbus Errors (ECU)

Sound Proof Canopy and Base Frame (Chassis) Specifications

Special, Registered GENPOWER Design and Color
A1 Quality DKP / HRU /Galvanized Steel
Sensitive Twist on Automatic Press Brake
Delicate Cut on Automatic Punch and Laser Bench
Sensitive Welding on Robotic Welding Bench

Chemical Cleaning Nano Technology Before Painting

Robotic Painting with Electrostatic Powder Paint
Drying and Stabilizing on 200°C Ovens
1500 Hour Salt Test

Glasswool Isolation, A1 Class Material -50/+500°C Special Covering Over Glass Wool Best Sound Level (in dBA) Temperature Tests
Rustproof Accessories
Cable Exit Connectors and Glands
Emergency Stop Button
Fuel Level Gauge
Fuel Drain Cap

Fuel Inlet and Return Records Impermeability Test for Fuel Tank Vacummed Rubber Mounted High Quality Weatherstrips High Quality Shock Absorbers Fuel Filling Cap (with ventilation) Lifting and Carrying Equipments Internal Exhaust Mufflers (Silencers) External Exhaust Mufflers (Silencers) Radiator Water Filling Cap Daily Fuel Tank External Fuel Tank

Special Products / Non - Standardized

Synchronised Systems Scada Systems Mobile Systems Light Towers

Ground Power Unit Generators

Generators - with Trailer
Medium Voltage - MV
IP44-IP54 Class Generators
Welding Machines
Natural Gas Generator

DC Generators
High Voltage - HV
Power Plants
Trigeneration Systems
Biogas Generator

High Frequency Generators Variable Speed Generators Super Silent Canopy Cogeneration Systems LPG Generator

TS EN ISO 2409 Certificate

Marine Generators
Dual Generators
Automatic Voltage Stabilizers
Electrical and Diesel Forklift
HFO Generator

Quality Documents & Certificates

Trademark Registration Certificate
Capacity Report (32400 Units / Year)
Made in Turkey Certificate- For Generator/1-5000 kVA
Made in Turkey Certificate-For Alternator/1-5000kVA
Made in Turkey Certificate- For Engine/1-5000 kW
Certificate of Competency for After Sales Services
2014/30/EU Electromagnetic Compatibility Directive
CE Certificate - 2000/14/AT - 2000/14 EC (CE 2195)

TSE 8528 - 4 Certificate
TSE 8528 - 5 Certificate
TSE 8528 - 8 Certificate
AB-0547-T Certificate
EAC - GOST Certificate/ Diesel Generator
EAC - GOST Certificate/ Gasoline Generator
CE Certificate - EN ISO 17050-1,2004
tificate

TS EN ISO 4628-3 Certificate
TS EN ISO 4628-4 Certificate
TS EN ISO 4628-5 Certificate
TS EN ISO 4628-8 Certificate
TS EN ISO 9227 Certificate
TS EN ISO 9227 Certificate
TS 9620 EN ISO 4628-2 Certificate
TS EN 60034 - 1 Certificate

EN ISO 12100:2010 Certificate
EN ISO 13857:2008 Certificate
EN ISO 14120:2015 Certificate
EN 349:1993+A1:2008 Certificate
EN 60204-1,2018 Certificate
EN 60204-2,2019 Certificate
EN 61000-6-2,2019 Certificate
EN 61000-6-4,2007/A1:2011 Certificate

EN ISO 8528-13.2016 Certificate



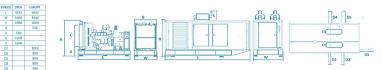


231/400V - 50Hz & 277/480V - 60Hz

Generator Dimensions

Values		Open Type Generator	Canopy Type Generator
Width	mm	1400	1646
Length	mm	3311	4632
Height	mm	1980	2641
Weight (Net)	Kg	3386	4240
Fuel Tank Capacity	L	1066	400

Generator Technical Drawings



Diesel Engine and Genset Rating Classifications

The below ratings represent the engine performance capabilities to conditions specified in TS ISO 8528/1, 8528-5, 8528-8, BS5000, ISO 3046/1:1986, NEMA MG-1.22.1, BS 5514/1.

STAND BY POWER RATING (ESP)

ESP is applicable for supplying emergency power for the duration of the utility power outage. No overload capability is available for this rating. Under no condition is an engine allowed to operate in parallel with the public utility at the Stand By Power rating. This rating should be applied where reliable utility power is available. A Stand By rated engine should be sized for a maximum of an 70% average load factor and 200 hours of operation per year. This includes less than 25 hours per year at the Stand By Power rating. Stand By ratings should never be applied except in true emergency power outages. Negotiated power outages contracted with a utility company are not considered an emergency.

PRIME POWER RATING (PRP):

Applicable for supplying electric power in lieu of commercially purchased power. Prime Power applications must be in the form of one of the following two categories

UNLIMITED TIME RUNNING PRIME POWER (ULTP):

PRP (Prime Power) is available for an unlimited number of hours per year in a variable load application. Variable load should not exceed a 70% average of the Prime Power rating during any operating period of 250 hours. The total operating time at 100% Prime Power shall not exceed 500 hours per year. A 10% overload capability is available for a period of 1 hour within a 12-hour period of operation. Total operating time at the 10% overload power shall not exceed 25 hours per year.

LIMITED TIME RUNNING PRIME POWER (LTP):

LTP (Limited Time Prime Power) is available for a limited number of hours in a nonvariable load application. It is intended for use in situations where power outages are contracted, such as in utility power curtailment. Engines may be operated in parallel to the public utility up to 750 hours per year at power levels never to exceed the Prime Power rating. The customer should be aware, however, that the life of any engine will be reduced by this constant high load operation. Any operation exceeding 750 hours per year at the Prime Power rating should use the Continuous Power rating.

CONTINUOUS POWER RATING (COP):

COP is the power that the engine can continue to use under the prescribed speed and the specified environment condition in the normal maintenance period stipulated in the manufacturing plant. And Continuous Power is applicable for supplying utility power at a constant 100% load for an unlimited number of hours per year. No overload capability is available for this rating.

PAY ATTENTION to the points below in picking and using the generator

- * Generators can work on Continuous Power at 70% of Prime power value if only all maintenances are done on time with original spare parts and high quality oils that manufacturer advice
- * Generators should not operate below 50% of Prime Power value. In such a case, the engine will burn excessive oil and eventually have irreparable damage
- * If your need is 1000 kVA or above, you should prefer Synchronic Systems with 2-3 generators with failure back up and simultaneous aging
- * These points will provide advantage for you with purchasing and operating the generator.

INTER Diesel Engine Power Ratings - Fuel Consumption - Oil Recommendation and Oil Grades

INTER Diesel Engine Power Ratings									
Engine Model	E765TDI		E765TDI		E765TDI Engine Family ID25		Engine Series	PII	
01		Typical Copora	tor Output (Net)	Engine Power					
Speed rpm	Type of Operation	Typical Genera	tor Output (Net)	Gross		Net			
ipiii		kVA	kWe	kWm	Нр	kWm	Нр		
1500	Stand By (Maximum)	610,0	488,0	538,0	722,1	514,0	689,9		
1500	Prime	554,0	443,0	490,0	657,7	467,0	626,8		
1800	Stand By (Maximum)	732,0	585,6	645,6	866,6	616,8	827,9		
1000	Prime	664,8	531,6	588,0	789,3	560,4	752,2		

Senerator powers are typical and are based on an average alternator efficiency and a power factor (Cos. Q) of 0.8

Fuel Consumption		
Percent of Prime power	50Hz - 1500 rpm	60Hz - 1800 rpm
	l/hr	l/hr
110%	125,00	133,50
100%	115,02	122,84
75%	86,71	92,60
50%	58.39	62.36

Note: At calorific value 42700 kJ/kg + 5 %, density 0.860 kg/dm3, temperature 280 K.

Fuel specification: BS 2869: Part 2 1998 Class A2 or (DIN EN 590) ASTM D975 D2 Diesel. The fuel must be clean and without water)

SAE GRADES For Engine Oils Recommended in Relation with the Outside Temperature °C -35 -30 -25 -20 -15 -10 -5 0 +5 +10 +15 +20 +25 +30 +35 +40 +45 +50 SAE 10W SAE 20W SAE 30 SAE 40 SAE 10W-40 SAE 10W-40 SAE 10W-60 Semisynthetic Base SAE 20W-60 Semisynthetic Base SAE 20W-60 Semisynthetic Base SAE 5W-30 Synthetic Base SAE 0W-30 Synthetic Base SAE 0W-30 Synthetic Base

Why You Should Buy **GENPOWER?**

Only because it is the biggest generator factory in the World? NO!

- * It is one of the most trustworthy and distinguished generator manufacturers in the world with its almost half century experience in the field.
- * It has interiorized the strategy of unconditional customer satisfaction and has been working with this work ethic together with its whole crew.
- * Customers and end users get their moneys' worth and more with every penny.
- * It has become a big family with customers and users who receive durable, long-lasting and high quality products.
- * It has been appreciated many times by customers and suppliers about the investments that have been made for quality enhancement.
- * Both its suppliers and customers always know GENPOWER is and will always be there for them. GENPOWER on their side in bad and good days.
- * In order not to harm brand reputation and recognition, each day, they work harder than the day before.
- * It continues its business only with the suppliers, customers, dealers and technical services that also embrace the same mind set and work ethics.
- * It proves its loyalty for quality and customer satisfaction with its mottos "Your power is the core of our business" and "nothing will be left unfinished"
- * The specifications and/or modifications you can receive with extra costs by other manufacturers are included in standard production in GENPOWER
- * When you purchase GENPOWER products, you are not a customer or a buyer but GENPOWER perceives and accepts you as a valuable member of its continuously growing family.

These are why you should buy from **GENPOWER**...





Factory Address
ASO II. Industrial Zone
2010. Street No: 18

2010. Street No: 18 06909 Temelli-Sincan/Ankara, Turkey Tel/ Fax: +90(312) 641 32 22 - 641 32 23 genpower@genpower.com.tr