GENPOWER®

GENERATOR

GNT Series

www.genpower.gen.tr

INTER SERIES
GNT 11 & 13

231/400V-50 HZ **&** 277/480V-60HZ

60 dB(A) @ 7mt

FEATURES AND ADVANTAGES

- Half Century Experience in Generator Manufacturing
- Diesel Engines with Advanced Technology and Quality Advanced technology and quality alternator
- 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 Radiato
- Fuel Filter with Water and Particle Separator
- First Class Product Support
- Global Technical Service and Maintenance Support

GENERAL GENERATOR INFORMATIONS

GENERATOR	FREQUENCY	VOLTAGE	POWER FACTOR	SPEED	DIESEL ENGINE			ALTERNATOR		
MODEL	HZ	V	COS Q	D/MIN.	BRAND	MODEL	SERIES	BRAND	MODEL	SERIES
GNT 11	50	231/400	0.8	1500	IDE	M13D	BII	GENPOWER	GNP	160 S
GNT 13	60	277/480	0.8	1800						160 S

MODEL	OPERATION	GENERATOR OUTPUT VALUES		
		kVA	kW	A
GNT 11	STAND BY	11,0	8,8	15,9
	PRIME	10,0	8,0	14,5
	CONTINUOUS	7,0	5,6	10,1
GNT 13	STAND BY	13,0	10,4	18,8
	PRIME	11,8	9,5	17,1
	CONTINUOUS	8,3	6,6	12,0

GNT 11 & 13

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

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INTER DIESEL ENGINE TECHNICAL PARAMETERS AND COMPARATIVE VALUES

Diesel Engine Technical Parameters

General

Number of Cylinder		4
Configuration		Vertical, in line
Aspiration		Natural
Combustion System		Direct Injection
Compression Ratio		19.1:1
Bore	mm	85
Stroke	mm	100
Displacement	L	2,27
Governing Type		Mechanic
Governing Class		G2
Rotation		CCW
Firing Order		1-3-4-2
Emission		Tier II

Moments of Rotation Inertia

Engine	kg • m²	0,44
Flywheel	kg • m²	2,55

Performance Rating

Speed Drop	%	≤3
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	5
Fuel Temperature (Fuel Inlet Pump)	ºC	38 ± 2

Filters

Air filter	Dry Type, Replaceable
Fuel Filter	With Water Separator
Oil Filter	Element Type, Particle Trap

Flywhell Housing and Flex Coupling

Flywheel Housing	SAE (J620)	4
Flex Coupling Disc	Inch (")	7,5

Overall Dimensions

Length*	mm	1087
Width	mm	597
Height	mm	749
Dry Weight	kg	275

***From front end of radiator to rear end of air filter**

Coolant System

Radiator Type	50ºC	Tropical
Total Coolant Capacity	L	13
Max. Perm. Coolant Outlet Temperature	ºC	103
Max. Perm. Flow Resist. (Cool. System And Piping)	bar	0,5
Max. Temperature of Coolant Warning	ºC	95
Max. Temperature of Coolant Shutdown	ºC	98
Thermostat Operation Temperature - Initial Open	ºC	68
Thermostat Operation Temperature - Full Open	ºC	72
Delivery of Coolant Pump	m ³/ h	1,60
Min. Pressure Before Coolant Pump	bar	0,15
Radiator Face Area	m²	0,21
Rows	Row	2
Matrix Density	Per/Inch	15,5
Material		Aluminum
Width of Matrix	mm	438
Height of Matrix	mm	480
Pressure Cap Setting	kPa	90
Estimated Cooling Air Flow Reserve	kPa	0,125
Engine Pre Heater-Tube (with Circulation Pump)	W	1500

Lubrication System

Total System	L	8
Min. Oil Level	L	7
Nominal Motor Operating Temperature	ºC	40
Lubricating Oil Pressure (Rated Speed)	bar	5
Relief Valve Opens	kPa	352
Oil / Fuel Consumption Ratio	%	≤0,3
Normal Oil Temperature	ºC	110

Electrical System

Voltage	V	12
Starter	kW	3,2
Alternator Output Ampers	A	25
Alternator Output Voltage	V	14
Battery Capacity	Ah	55

Fan

Diameter	mm	410
Drive Ratio		1,61:1
Number Of Blades		7
Material		Plastic
Type		Blowing

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Diesel Engine Matching Parameters

50 Hz @ 1500 r/min		Stand By	Prime	60 Hz @ 1800 r/min		Stand By	Prime
Gross Engine Power	kW	13,0	11.5	Gross Engine Power	kW	15,6	14,2
Net Engine Power	kW	11,0	10,0	Net Engine Power	kW	13,3	12,4
Fan Power Consumption (Belt Pulley Driven)	kW	1,5	1,5	Fan Power Consumption (Belt Pulley Driven)	kW	1,8	1,8
Other Power Loss	kW	0,5	0,0	Other Power Loss	kW	0,5	0,0
Mean Effective Pressure	MPa	0,46	0,41	Mean Effective Pressure	MPa	0,46	0,42
Intake Air Flow	m ³/ min	1,25	1,25	Intake Air Flow	m ³/ min	1,50	1,50
Exhaust Temperature Limit	ºC	300	300	Exhaust Temperature Limit	,0ºC	360	360
Exhaust Flow	m ³/ min	1,30	1,15	Exhaust Flow	m ³/ min	1,57	1,42
Boost Pressure Ratio		2,18	1,98	Boost Pressure Ratio		2,60	2,51
Mean Piston Speed	m / s	5,0	5,0	Mean Piston Speed	m / s	6,0	6,0
Cooling Fan Air Flow	m ³/ min	46,6	46,6	Cooling Fan Air Flow	m ³/ min	55,9	55,9
Typical Generator Output Power	kVA	12	11	Typical Generator Output Power	kVA	14	13
Heat Rejection		**Stand By**	**Prime**	**Heat Rejection**		**Stand By**	**Prime**
Energy In Fuel (Heat Of Combustion	kW	36,9	33,2	Energy In Fuel (Heat Of Combustion	kW	44,0	38,9
Gross Heat To Power	kW	13,0	11,5	Gross Heat To Power	kW	15,6	12,4
Energy To Coolant And Lubricating Oil	kW	11,8	10,7	Energy To Coolant And Lubricating Oil	kW	14,2	13,2
Heat Dissipation Capacity*	kW	-	-	Heat Dissipation Capacity*	kW	-	-
Energy To Exhaust	kW	9,7	8,8	Energy To Exhaust	kW	11,6	10,9
Heat To Radiation	kW	2,4	2,2	Heat To Radiation	kW	2,6	2,5
*Intake Intercooled System				*Intake Intercooled System			

GENPOWER ALTERNATOR TECHNICAL INFORMATIONS

Alternator Technical Parameters

Insulation Class		H	**Field Control System**		Self-Excited
Winding Pitch		2/3 - (N° 6)	**A.V.R Model**	Standard	SX460
Wires		12	**Voltage Regulation**	%	± 1
Protection		IP 23	**Sustained Short-Circuit Current**	10 sec	300% (3 IN)
Altitude	m	1000	**Total Harmonic (*) TGH / THC**	%	< 5
Overspeed	d/min	2250	**Waveform: NEMA = TIF – (*)**		< 50
Air Flow	m^3/sec.	0.071	**Waveform: I.E.C. = THF – (*)**	%	< 2
Bearing Drive	Non	-	**Bearing Non - Drive**	Roller	6306-2RZ
Rotor Winding	%100	Copper	**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 standa

GNT 11 & 13

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

60 dB(A) @ 7mt

ALTERNATOR SPECIFICATIONS

50 Hz – 231 / 400V – Cos Q 0,8 – 1500 d/min — 50 Hz

Standard Use Alternator					Optional Use Alternator				
Brand/Model	GENPOWER	**160S**		LEROY-SOMER	**TAL040B**		STAMFORD		**SOL1H**
Duty				Continuous				Stand By	
Ambient	C°			40°C				27°C	
Class / Temperature Rise	C°			H / 125° 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	**10,0**	**10,0**	**11,0**	**6,6**	**11,0**	**11,0**	**12,0**	**7,5**
Output Power	kW	**8,0**	**8,0**	**8,8**	**5,3**	**8,8**	**8,8**	**9,6**	**6,0**

60 Hz – 277 / 480V – Cos Q 0,8 – 1800 d/min — 60 Hz

Standard Use Alternator					Optional Use Alternator				
Brand/Model	GENPOWER	**160S**		LEROY-SOMER	**TAL040B**		STAMFORD		**PI044E-S0L1-H**
Duty				Continuous				Stand By	
Ambient	C°			40°C				27°C	
Class / Temperature Rise	C°			H / 125° 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	**12,0**	**13,0**	**13,0**	**8,6**	**13,0**	**14,0**	**14,0**	**9,3**
Output Power	kW	**9,6**	**10,4**	**10,4**	**6,9**	**10,4**	**11,2**	**11,2**	**7,4**

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CONTROL PANEL FEATURES

Control Panel Features

Powder Painted Steel Panel with Lockable Door	Battery Charger	Control Relays	System Protection MCBs
ATS / Automatic Transfer - Optional	Emergency Stop Button	Terminal Blocks	Circuit Breaker - Optional
Control Module:	Backlit, 128x64 Pixels	Load Output Terminal	LCD Screen

Control Module Technical Parameters

Brand	GENPOWER/FORTRUST	**Model**	Trans-MIDIAMF.232.GP
Dimensions	120 mm x 94 mm	**Protection Class**	From the Front IP65
Weight	260 gr	**Environmental Conditions**	2000 Meters Above Sea Level
Ambient Humidity	Maximum %90	**Ambient Temperature**	-20℃ to +70℃
DC Battery Supply Voltage	8-32 V	**Battery Voltage Measurement**	8-32 V
Network Frequency	5-99,9 Hz	**Mains Voltage Measurement**	3-300 V Phase - neutral, 5 – 99,9 Hz
Generator Voltage Measurement	3-300 V	**Generator Frequency**	5-99,9 Hz
Current Transformer Secondary	5A	**Working Period**	Continually
Charge Alternator Voltage Measurement	8-32 V	**Charge Alternator Excitation**	210mA&12V,105ma 24V Nominal 2.5 W
Communication Interface	RS-232	**Analogue Sender Measurement**	0-1300 ohm
Generator Contactor Relay Output	5A & 250 V	**Mains Contactor Relay Output**	5A & 250V
Solenoid Transistor Outputs	1A with DC Supply	**Start Transistor Outputs**	1A with DC Supply
Configure-3 Transistor Outputs	1A with DC Supply	**Configure-4 Transistor Outputs**	1A with DC Supply

Control Module Functions

Mains Voltage Level Control	Generator Voltage Level Control	3 Phase Generator Protections	3 Phase AMF Function
Mains Frequency Level Control	Generator Frequency Level Control	-High/Low Voltage	-High/Low Frequency
Engine Operating Option Control	Generator Current Level Control	-High/Low Frequency	-High/Low Voltage
Engine Stop Option Control	Generator Power Level Control	-Current / Voltage Asymmetry	-High / Low Water Temperature
Engine Speed (RPM) Level Control	Generator Working Schedule and Timing Control	-Over Current / Overload	-High / Low Load
Battery Voltage Options Control	Oil Pressure Controllers Control	Overheat Control	Mains, Generator ATS Control
Check Engine Maintenance Times	Configurable Analog Inputs and Outputs	Single Phase or Three Phase - Phase Selection	Network, Voltage, Frequency Display
Communication Interfaces GPRS, GSM	Keeping Error Records of Past Events	Parameter Setting via Control module	Parameter Setting via Computer
Voltage	Configurable Programmable Digital Inputs and Outputs	Generator Phase Sequence	Hours of Operation
Engine Speed	Current and Frequency	Water Temperature	Earthing
Alarm Horn	Modbus and SNMP	Ground Leakage	Ethernet, USB, RS232, RS485
Heater Tube Thermostat Control	Working Hours	Analog Modem	Selectable Protection Alarm / Shutdown
Battery Voltage	Oil Pressure		

Control Module Alarms

Emergency Stop Malfunction	Low Generator Voltage	Low Water Temperature	Charge Alternator Error
High Generator Voltage	High Generator Frequency	Temperature Sensor Broken	Unbalanced Load
Low Generator Frequency	Phase Sequence Error	Reverse Power	Maintenance Time Alarm
Low Load	Overload	Start Error	Low Speed
Over Current	Low Water Level (Optional)	Stop Error	High speed
Unbalanced Current	Low Oil Pressure	Magnetic Pickup Error	Broken Oil Sensor Cable
High Oil Temperature (Optional)	High Battery Voltage	High Water Temperature	Electronic Canbus Errors (ECU)
Low Fuel Level (Optional)	Low Battery Voltage		

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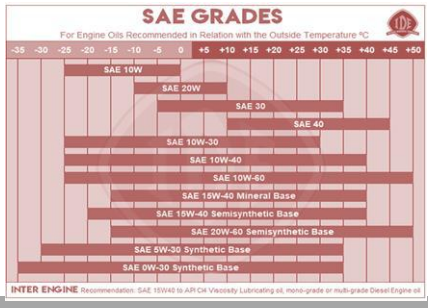
Generator Dimensions

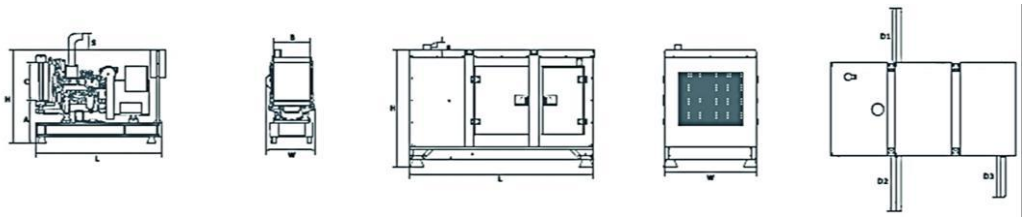
Values		Open Type Generator	Closed Type Generator
Width	mm	597	1000
Length	mm	1400	2000
Height	mm	1309	1190
Weight (Empty)	Kg	522	650
Fuel Tank Capacity	L	58	100

Oil Recommendation and Oil Grades



Generator Technical Drawing

SYMBOL	OPEN	CABIN
L	1400	2000
W	597	1000
H	871	1290
S	438	80
A	639	
B	438	
C	480	
D1		828
D2		828
D3		450
D4		
D5		



INTER Diesel Engine Power Ratings

Engine Model	M13D	Engine Family	ID 11	Engine Series	BII

Speed rpm	Type of Operation	Typical Generator Output (Net)		Engine Power			
				Gross		Net	
		kVA	kWe	kWm	Hp	kWm	Hp
1500	Stand By (Maximum)	11,7	9,4	13,0	17,4	11,0	14,8
	Prime	10,6	8,5	11,5	15,4	10,0	13,4
1800	Stand By (Maximum)	14,1	11,3	15,6	20,9	13,3	17,9
	Prime	12,8	10,3	14,2	19,1	12,4	16,6

Generator Powers are typical and based on an average alternator efficiency and a power factor (Cos. Q) of 0,8

Fuel Consumption

% of Prime Power	1500 rpm		1800 rpm	
	g/kWh	I/h	g/kWh	I/h
%110	245	3,2	245,0	3,9
%100	245	2,9	245,0	3,6
%75	250	2,2	250,0	2,7
%50	255	1,5	255,0	1,9

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Sound Proof Canopy and Base Frame (Chassis) Specifications

Special, Registered GENPOWER Design and Color	Radiator Water Filling Cap
A1 Quality DKP / HRU /Galvanized Steel	Temperature Tests
Sensitive Twist on Automatic Press Brake	Rustproof Accessories
Delicate Cut on Automatic Punch and Laser Bench	Cable Exit Connectors and Glands
Sensitive Welding on Robotic Welding Bench	Emergency Stop Button
Chemical Cleaning Nano Technology Before Painting	Fuel Level Gauge
Lifting and Carrying Equipments	Fuel Drain Cap
Internal Exhaust Mufflers (Silencers)	Daily Fuel Tank
Robotic Painting with Electrostatic Powder Paint	Fuel Inlet and Return Records
Drying and Stabilizing on 200°C Ovens	Impermeability Test for Fuel Tank
1500 Hour Salt Test	Vacummed Rubber Mounted
Glasswool Isolation, A1 Class Material - 50/+500ºC	High Quality Weatherstrips
Special Covering Over Glass Wool	High Quality Shock Absorbers
Best Sound Level (in dBA)	Fuel Fill Cap (with ventilation)
External Exhaust Mufflers (Silencers)	External Fuel Tank
Special Products / Non - Standardized	
Synchronized Systems	DC Generators
Scada Systems	High Voltage - HV
Mobile Systems	Power Plants
Light Towers	Trigeneration Systems
Ground Power Unit Generators	Biogas Engine Generator
Marine Generators	Electrical and Diesel Forklift
Dual Generators	
Generators - with Trailer	High Frequency Generators
Medium Voltage (MV) Generators	Variable Speed Generators
IP44-IP 54 Class Generators	Super Silent Canopy
Welding Generators	Cogeneration Systems
Natural Gas Engine Generators	LPG Engine Generators
Automatic Voltage Stabilizers	HFO Generator
Quality Documents/ Certificates	
Trademark registration certificate	TSE 8528-4 Certificate
Capacity Report (32400 Pieces/Year)	TSE 8528-5 Certificate
Domestic Goods Generator Certificate / 1-5000 kva	TSE 8528-8 Certificate
Domestic Goods Engine Certificate / 1-5000 kw	AB-0547-T
Domestic Goods Alternator Certificate / 1-5000 kva	EAC-GOST Certificate/Diesel Generator
After Sales Service Qualification Certificate	EAC-GOST Certificate/Gasoline Generators
2006/42/EC Machinery Directive Certificate of Conformity	CE Certificate-EN ISO 17050-1,2004
2014/30/EU Electromagnetic Directive Conformity Certificate	Coatchem - Türkak 1500 Hour Salt Certificate
EN ISO 8528-13,2016	EN 349:1993+A1:2008
EN ISO 12100:2010	TS EN ISO 2409
Industry Registration Certificate	TS EN ISO 4628-3
Manufacturing Qualification Certificate	TS EN ISO 4628-4
TSE-Service Sufficiency Certificate	TS EN ISO 4628-5
ISO 9001-2015 Certificate	TS EN ISO 4628-8
ISO 14001-2015 Certificate	TS EN ISO 9227
OHSAS 18001-2007 Certificate	TS 9620 EN ISO 4628-2
CE Certificate-2000/14/AT-2000/14 EC (CE 2195)	TS EN 60034-1 Certificate
EN ISO13857:2008	EN 61000-6-2,2019
EN ISO 14120:2015	EN 61000-6-4,2007/A1:2011

GNT 11 & 13

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

OTHER DETAIL

GENERATOR POWER RATINGS

GENPOWER GENERATORS; COMPATIBLE WITH TS ISO 852 8-1, 852 8-4, ISO 85 28-5, ISO 85 28-8, BS500 0, ISO 30 46/1: 1985, IEC 600 34, NEMA MG-1.22 ., BS551 4/1 STANDARDS IT IS PRODUCED AS

- **STAND BY (Wait) Power - ESP**

During a power outage, emergency power is provided. No load higher than the Stand By power level specified by the manufacturer may be used. With regular maintenance performed according to the manufacturer's specifications, it can be operated for a maximum of 200 hours per year at an average variable load of up to 70%, and for a maximum of 25 hours per year at the Stand By power level specified by the manufacturer.

- **PRIME (Primal) Power – PRP**

Under variable loads and provided that all maintenance is carried out regularly and, in the manner, prescribed by the manufacturer, it can be used unlimitedly per year without exceeding an average of 70% of the manufacturer's given Prime power. The usage time for Prime power provided by the manufacturer cannot exceed 500 hours per year at 100% capacity. For a 12-hour operating period, a 1-hour period of overload at 10% can be made, and the total duration of the overload cannot exceed 25 hours per year.

LIMITED CONTINUOUS Power – LTP

Assuming all maintenance is performed regularly and according to the manufacturer's specifications, the generator can be loaded with an average power up to 100% of the prime power specified by the manufacturer, but not exceeding 500 hours per year. Overloading is not permitted.

- **CONTINUOUS (Continuous - Plant Style Usage) Power - COP**

In the specified environmental conditions, if all maintenance is carried out regularly and, in a way, stipulated by the manufacturer, it is the power that it can work unlimitedly at variable or fixed loads, it cannot be loaded above the Continuous power given by the manufacturer.

It is recommended to pay attention to the following points in Generator Selection and Usage.

Generators can be operated with a maximum load of 70% of the Prime (PRP) power specified in the catalog, provided that all maintenance is carried out on time and with original spare parts, using oil of the quality declared by the manufacturer, at continuous operation level. (ISO 8528)

Generators should not be operated at powers lower than 50% of the Prime (PRP) power specified in the catalog, such situations cause the engine to burn and throw oil excessively and after a short time permanent and irreparable damage will occur.

If your requirement is an average of 1000 kVA and above, we recommend you to choose dual, triple synchronous, equal aging and fail-safe systems.

• You will receive important advantages during the purchasing and the subsequent operating phases.

WHY YOU SHOULD BUY GENPOWER?

JUST BECAUSE IT IS THE WORLD'S LARGEST GENERATOR FACTORY? NO!

- It is one of the most reliable and well-known independent generator manufacturers in the world with its experience of half a century.
- It has adopted the principle of Unconditional Customer and User Satisfaction and continues to work for this with its entire team.
- Customers and users get more than their money's worth.
- It has become a big FAMILY with its customers and users who buy durable, long-lasting, high quality products.
- It has received great appreciation from suppliers and users with its investments in quality.
- Suppliers and users know that GENPOWER is always with them, "in good times and in bad times", and GENPOWER knows that they are always with them.
- It continues to work and research more every day than the previous one, in order not to harm its brand awareness and reliability.
- It continues on its way only with its employees, suppliers, dealers and services who adopt these philosophies, carry responsibility, make it a lifestyle.
- It has always proven its commitment to quality and satisfaction with the slogans "Our job, your power" and "Nothing will be left unfinished".
- Everything that others call additional cost is standard in GENPOWER.
- We never look at our buyers and users as customers, each of our buyers and users is a valuable and integral member of the ever-growing GENPOWER family.

THESE ARE WHY YOU SHOULD BUY GENPOWER...

GENPOWER®
GENERATOR

Your Power is the Core Our Business...

SCAN ME

www.genpower.gen.tr

ISO 9001:2008
OHSAS 18001:2007
ISO 14001:2004

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