

TGE1000-NG

Natural Gas Genset

Standard Basic Module - Open Type

- Highly efficient gas engine
- AC synchronous alternator
- Gas safety train and gas protection device against leakage
- Cooling system suitable for ambient temperature up to 50°C
- Advanced engine control system, including: ignition system, detonation control system ,speed control system , air/fuel ratio control system and cylinder temp. protection system
- Strict shop test for all gensets
- Integrated the control & switch cabinet
- Multi-functional control system with easy operation
- Data communication interfaces integrated into control system
- Monitoring battery voltage and charging from mains
- Bus interface for connecting to higher level control unit



Structure and control cabinet

Structure type	Open type
Container painting	High-class paint
Electrical control cabinet	Integrated ,IP54
Noise level @1m, dB(A)	107.8
@7m, dB(A)	92.1
@10m, dB(A)	85.8

Dimension and weight

Dimension (LxWxH) , mm	7500x1900x2210
Weight,kg	13500

Special statement :

1. The technical data are based on natural gas with a lower calorific value of 36MJ/Nm³.The technical data indicated is based on standard conditions according to ISO8528/1, ISO3046/1 and BS5514/1.
2. The technical data is measured in standard conditions:
Absolute atmospheric pressure: 100kPa
Ambient temperature: 25°C
Relative air humidity: 30%
3. Rating adaptation at ambient conditions acc to DIN ISO 3046/1.
The tolerance for the specific fuel consumption is + 5 % at rated output.
4. Technical data above are just for standard product ,and may be subject to change. As this document is used only for presale reference, take the specification supplied by PowerLink before ordering as final.

Electric data @50Hz

Voltage-V	Power-kW	Efficiency-%	Current-A
380	1000	43.0	1899
400	1000	43.0	1804
415	1000	43.0	1739

Fuel and emission

Fuel type	Natural gas
Methane number	MN > 80
Low heat value (KWh/m ³)	10.0
Gas density (Kg/m ³)	0.8
Fuel consumption @100% load, m ³ /h	233
Emission without catalytic converter	
NOx, mg/Nm ³	≤500
CO, mg/Nm ³	≤300
Emission with catalytic converter (optional)	
NOx, mg/Nm ³	≤ 250

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Standard Basic Module + Acoustic Attenuated Container (Optional)



Dimension and Noise Level

Optional container (mm) (customized container modeling service available)	<input type="checkbox"/>	12192*2438*2896
	<input type="checkbox"/>	12192*3000*2896
	<input type="checkbox"/>	13500*3000*2896
	<input type="checkbox"/>	15000*3200*3000
Noise Level@ 1m, dB(A)		86
@ 7m, dB(A)		75
@ 10m, dB(A)		70

- Outdoor application enabled, weatherproof and dustproof, corrosion preventive
- Environmental friendly low emission
- Modular designed and manufactured for plug and play
- Low noise does not affect the surrounding environment



Genset performance data and manufacturing technology

Genset model	TGE1000-NG	Telephone interference factor(TIF)	≤50
Frequency(Hz)	50	Telephone harmonious factor(THF)	≤2%, as per BS4999
Electrical output power (kW)	1000	<p>Manufacturing technology</p> <ul style="list-style-type: none"> ● Special welded base frame, inner vibration isolators and design for whole lifting ● With high quality paint, enduring brightness as well resistance against abrasion and defacing ● Installation manual, operation and maintenance manual circuit diagram <p>Standards and certificate</p> <ul style="list-style-type: none"> ● ISO3046, ISO8528, GB2820 ● BS5000PT99, AS1359, IEC34 ● ISO9001:2008 quality system certification 	
Genset electrical efficiency	43.0%		
Overload runtime at 1.1xSe(hour)	1		
Steady-state voltage deviation	≤±1%		
Transient-state voltage deviation	-15%~20%		
Voltage recovery time(s)	≤4		
Voltage unbalance	1%		
Steady-state frequency regulation	±0.5%		
Transient -state frequency regulation	±5%		
Frequency recovery time(s)	≤3		
Steady-state frequency band	0.5%		
Recovery time response(s)	0.5		

Gas engine		AC alternator	
Model	CG170-12	Model	MJB 450LB4
NO. of cylinders	12	Rated output power @400V (kW)	1187
Cylinders arrangement	V-form	Power factor	0.8
Bore x Stroke (mm)	170x195	Rated current @400V (A)	2142
Displacement (L)	53	Excitation system	AREP
Cooling system	Water cooled	THF (BS EN60034- 1)	<2%
Rated speed (rpm)	1500	TIF (NEMA MG 1-22)	<50
Rated output power (kW)	1187	Winding material	100% copper
Fuel input(kW)	2326	Wiring connection	Star
Intake system	Turbocharged, intercooled	Rotor insulation class	H
Oil consumption (kg/h)	0.2	Winding pitch	2/3
Combustion type	Lean burn	A.V.R. model	MX321
Battery voltage	24V	Voltage fluctuation(no load to full load)	± 0.5%
Coolant type	Glycol mixture	Housing protection	IP23
Gas consumption(m ³ /h)@ 100%load	233	Excitation method	Brushless
75%load	175	Rated ambient temperature(°C)	40
50%load	117	Rated stator temperature rise(°C)	125

PCC-300 control system

The advanced control system is adopted with all necessary functions to protect and control the gas genset.

Features	
<ul style="list-style-type: none"> - Auto start and auto mains failure(AMF) - Voltage and PF control - Engine monitor: speed, oil pressure, coolant temperature, battery voltage, running time and so forth - Alternator data: U, I, Hz, kW, kVA, kVA_r, PF, kWh, kVAh - Grid data: voltage, frequency 	<ul style="list-style-type: none"> - RS232, RS485, and Ethernet available at the same time - Remote control with internet and GPRS - Data logging & trending and PLC functionality - Manual, auto and remote control mode optional - CAN and modbus communication
Advantages	
<ul style="list-style-type: none"> - Accordant with consumer requirement - Complete control solution - Convenient remote monitor and service 	<ul style="list-style-type: none"> - Simplified engine start/stop control - Enhanced stability and safety

Standard protection functions	Standard control functions	
Alternator protection <ul style="list-style-type: none"> - Overload - Overcurrent - Overvoltage - Undervoltage - Over/under frequency - Unbalanced current 	Power control <ul style="list-style-type: none"> - RPM control 	Voltage control <ul style="list-style-type: none"> - Voltage control(island)
	Valve control <ul style="list-style-type: none"> - Cooling system 	Pump control <ul style="list-style-type: none"> - Cooling system
Busbar/mains protection <ul style="list-style-type: none"> - voltage - Frequency 	Fan control <ul style="list-style-type: none"> - Ventilation for engine room 	Lubrication control <ul style="list-style-type: none"> - Auto refilling - Warning and monitoring
	Engine protection <ul style="list-style-type: none"> - Various routine and customized protection functions - Monitoring 	

Standard configuration

Engine	Alternator	Canopy and base	Electrical cabinet
Gas engine Ignition system Lambda controller Speed control system Electrical start motor Battery system Detonation control system Lockable isolator switch Turbocharger & intercooler	AC alternator H class insulation IP23 protection AVR voltage regulator AREP	Steel monocoque base frame Engine bracket Vibration isolators Alternator base	GCC control system LCD screen Main circuit breaker Electrical switch cabinet Communication interfaces Mains float charger
Gas supply system	Lubrication system	Standard voltage	Induction/ exhaust system
Gas safety train Air/fuel mixer Throttle valve Flame arrester	Oil filter Daily auxiliary oil tank Auto refilling oil system New and used oil tank (Only applicable to container , two inch with the daily oil tank)	380/220V 400/230V 415/240V 440/254V	Air filter Exhaust silencer Exhaust bellows Gas leakage protection(Only applicable to canopy and container)
Cooling system	Service and documents		
Intercooler radiator Circulation coolant pump	Tools package Installation and operation manual Maintenance manual Software manual Parts manual	Engine operation and maintenance manual Gas quality specification Control system manual After service guide Standard package	

Optional configuration

Engine	Alternator	Lubrication system
Jacket water radiator Jacket water heater	Space heater Treatments against humidity and corrosion	
Electrical system	Gas supply system	Service and documents
RCD ATS control cabinet Thermal power gauge Electric power gauge	Gas flow gauge	Service tools Maintenance and service parts
Voltage	Exhaust system	Exhaust gas using
220V 230V 240V	Three-way catalytic converter	Exhaust gas evaporator LiBr refrigerator