TGE1200-BG

Biogas Genset

We Produce Green Energy...

Standard Basic Module -Open Type

- Highly efficientgas engine
- AC synchronous alternator
- Gas safety trainand gas protection device against leakage
- Cooling system suitable for ambient temperature up to 50℃
- 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
- Industrial silencer reduces the noise by 12-20dB(A)
- Integrated the control& switch cabinet
- Multi-functional control system with easy operation
- Data communication interfaces integrated into control system
- Monitoring battery voltage and chargingfrom mains
- Bus interface for connecting to higher level control unit

Structure and control cabinet

Structure type	Open
Container painting	High-class powder coating
Electrical control cabinet	Integrated,IP54
Noise level@1m, dB(A)	108.8
@7m, dB(A)	92.7
@10m, dB(A)	86

Dimension and weight

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

Electric data @50Hz

Voltage-V	Power-kW	Efficiency-%	Current-A
380	1200	43.0	2279
400	1200	43.0	2165
415	1200	43.0	2087

Fuel and emission

Fuel type	Biogas
Fuel composition	60%-CH_4/40%-CO_2
Methane number	MN > 100
Fuel consumption @100% load, m^3	570
Supply gas pressure range, kPa	20~25
Emission without catalytic converter	
NOx , mg/Nm^3	≤500
CO , mg/Nm^3	≤300
Emission with catalytic converter (optional)	
NOx , mg/Nm^3	≤250

Special statement :

1、The technical data are based on a gas mixture of 50% methane and 50% carbondioxide with a calorific value of 5,0 kWh/Nm^3 and a methane no. > 100.

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.

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Standard Basic Module + Acoustic Attenuated Container (Optional)

Dimension and Noise Level

Optional container（mm）（customized container modeling serviceavailable）	☐ 12192*3000*2896 ☐ 13500*3000*2896 ☐ 15000*3200*3000 ☐ 17000*3200*3000
Noise Level@ 1m，dB(A)	87
@ 7m，dB(A)	75
@ 10m，dB(A)	72

☐ 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

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POWERink Power Systems
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Genset performance data and manufacturing technology			
Genset model	TGE1200-BG	Telephone interference factor(TIF)	≤50
Frequency(Hz)	50	Telephone harmonious factor(THF)	≤2% , as per BS4999
Electrical output power (kW)	1200	**Manufacturing technology** ● Special welded base frame, inner vibration isolators and design for whole lifting ● With high quality paint, endurable brightness as well resistance against abrasion and defacing ● Installation manual, operation and maintenance manual circuit diagram **Standards and certificate** ● ISO3046 , ISO8528 , GB2820 ● BS5000PT99 , AS1359 , IEC34 ● ISO9001:2008 quality system certification	
Genset electrical efficiency	42.1%		
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	TCG2020V12	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	2850	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	R450
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	570	Excitation method	Brushless
75%load	437	Rated ambient temperature(℃)	40
50%load	307	Rated stator temperature rise(℃)	125

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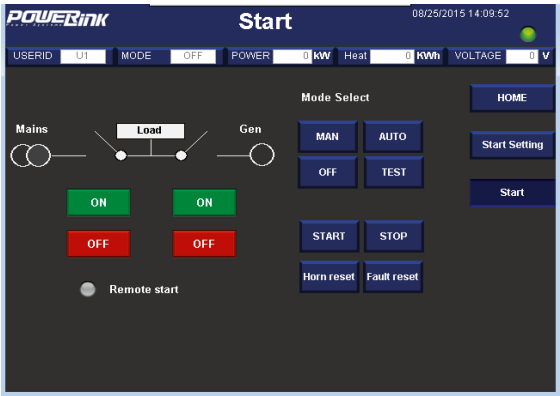
PCC-300 control system

Open control system is adopted with touch screen display , and various functions, including: engine protection and control, CHP parallel and grid connection,and CHP control functions,as wellas communication functions，etc.



Main functions

- Engine monitor：coolant, lubrication, exhaust, battery
- Supply gas circuit monitor：pressure,temperature and CH4 content
- Auto paralleling and load share
- Voltage and PF control
- Alternator data：U, I, Hz, kW, kVA, kVAr, PF, kWh, kVAh
- Mains data：U, I, Hz, kW, kVAr, PF
- Modbus communicationprotocol based on RS232 and RS485 interfaces
- SMS message
- Internet connection and USB 2.0 interface
- 10-inch touch screen
- Internet monitor, auto orientation and cloud communication
- 1000 history events log

Advantages

- Accordant with consumer requirement
- Complete control project
- Convenient remote monitor and service
- Simplified engine start/stop control
- Enhanced stability and safety

Standard protection functions	Standard control functions	
Alternator protection - 2xReverse power - 2xOverload - 4xOvercurrent - 1xOvervoltage - 1xUndervoltage - 1xOver/underfrequency 1xUnbalanced current	**Powercontrol** - RPM control(synchronization) - Power control(grid connection) - Load share(island)	**Voltage control** - Voltage tracking (synchronization) - Voltage control(island) - PF control(grid connection) - Reactive power share (island）
	Lubrication control - Auto refilling - Warning and monitoring	**Pump control** - Cooling system - Emergency radiator
Busbar/mains protection - 1xOvervoltage - 1xUndervoltage - 1xOver/under frequency - 1xPhase sequence - 1xROCOF alarm	**Fan control** - Ventilation for engine room - Radiator fan - Emergency radiator fan	**Valve control** - Cooling system - Heating system - Emergency radiator
	Engine protection - Various routine and customized protection functions - Monitoring	

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Standard configuration

Engine	Alternator	Canopy and base	Electrical cabinet
Gas engine Oil pressure sensor Coolant temperature sensor Inlet water temp./Pressure sensor Electrical start motor Crankshaftposition sensor Battery system Cylinder temp. protection system Lambda controller Detonation control system Speed control system Lockable isolator switch Air/oilseparator	AREP AC alternator H class insulation IP23 protection AVR voltage regulator	Steel monocoque base frame Engine bracket Vibration isolators Alternator base	PLC LCD screen Air circuit breaker Paralleling control system Communication interfaces Breaker cabinet Lighting system 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**		
Intercoolerradiator Jacket water radiator Jacket water circulation pump Mixture circulation pump Coolant level switch	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 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 Emergency pressure relief torch Refrigerated gas drier Water separator Gas compressor Gas purification device	Service tools Maintenance and service parts
Voltage	**Exhaust system**	**Exhaust gas using**
220V230V240V	Three-way catalytic converter	Exhaust gas evaporator LiBr refrigerator

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Data is subject to change without prior notice as new products are always developed.

Please contact PowerLink or local agent with any doubts or for more information