TGE600-NG

Natural Gas Genset

POWERINK Power Systems

We Produce Green Energy...

Standard Basic Module -Open Type

- Highly efficient gas 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 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)	101.8
@7m, dB(A)	89.9
@10m, dB(A)	85.7

Dimension and weight

Dimension (LxWxH) , mm	5000x1590x2190
Weight,kg	10437

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 toISO8528/1, 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	600	43.3	1140
400	600	43.3	1083
415	600	43.3	1043

Fuel and emission

Fuel type	Natural gas
Methane number	MN > 80
Low heat value (KWh/m³)	10.0
Gas density (Kg/m³)	0.8
Fuel consumption @100% load, m³/h	143
Supply gas pressure range, kPa	10~20
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 serviceavailable）	☐ 12192*2438*2896 ☐ 12192*3000*2896 ☐ 13500*3000*2896 ☐ 15000*3200*3000 ☐ 17000*3200*3000
Noise Level@ 1m，dB(A)	82.4
@ 7m，dB(A)	73.7
@ 10m，dB(A)	69.9

☐ 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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Genset performance data and manufacturing technology

Genset model	TGE600-NG	Telephone interference factor(TIF)	≤50
Frequency(Hz)	50	Telephone harmonious factor(THF)	≤2% , as per BS4999
Electrical output power (kW)	600		
Genset electrical efficiency	42%		
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		

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

Gas engine		AC alternator	
Model	TCG3016V12	Model	LSA49.3M8
NO. of cylinders	12	Rated output power @400V (kW)	656
Cylinders arrangement	V	Power factor	0.8
Bore x Stroke (mm)	132×160	Rated current @400V (A)	1184
Displacement (L)	26	Excitation system	AREP
Cooling system	水冷	THF (BS EN60034- 1)	<2%
Rated speed (rpm)	1500	TIF (NEMA MG 1-22)	<50
Rated output power (kW)	656	Winding material	100% copper
Fuel input(kW)	1429	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	143	Excitation method	Brushless
75%load	110	Rated ambient temperature(℃)	40
50%load	78	Rated stator temperature rise(℃)	125

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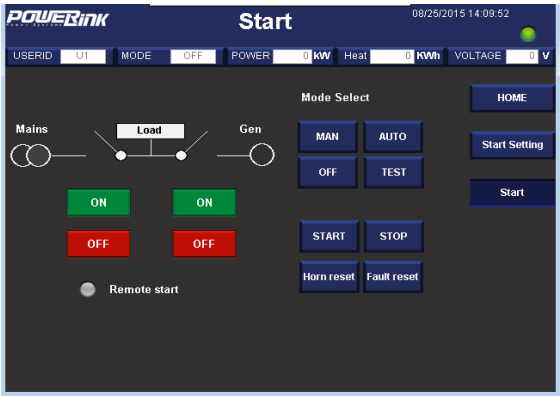
PCC-300 control system

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 Ignition system Lambda controller Speed control system Electrical start motor Battery system Detonation control system Cylinder temp. protection 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	GCCcontrol 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**		
Intercoolerradiator 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