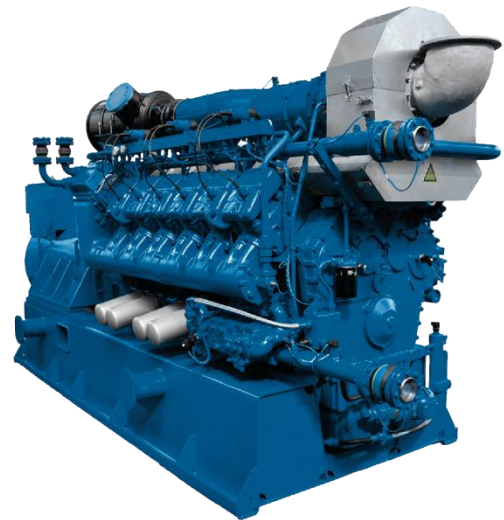


TGE1200-NG

Natural gasGenset

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.
- 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) | 108.8 |
| @7m, dB(A) | 92.7 |
| @10m, dB(A) | 86 |

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 | 1200 | 43.6 | 2279 |
| 400 | 1200 | 43.6 | 2165 |
| 415 | 1200 | 43.6 | 2087 |

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 | 275 |
| 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 |

TGE1200-NG

Natural gasGenset

Standard Basic Module + Acoustic Attenuated Container (Optional)



Dimension and Noise Level

| | | |
|--|--------------------------|-----------------|
| Optional container (mm) (customized container modeling serviceavailable) | <input type="checkbox"/> | 12192*3000*2896 |
| | <input type="checkbox"/> | 13500*3000*2896 |
| | <input type="checkbox"/> | 15000*3200*3000 |
| | <input type="checkbox"/> | 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



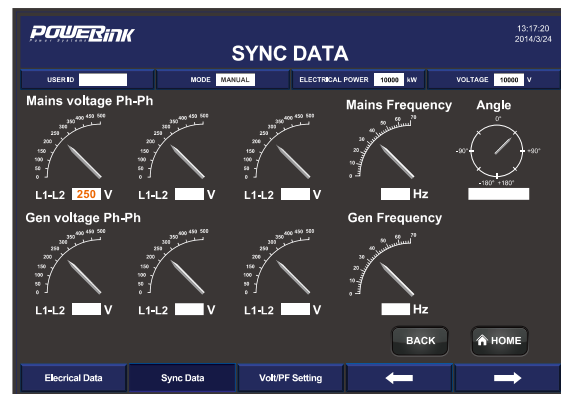
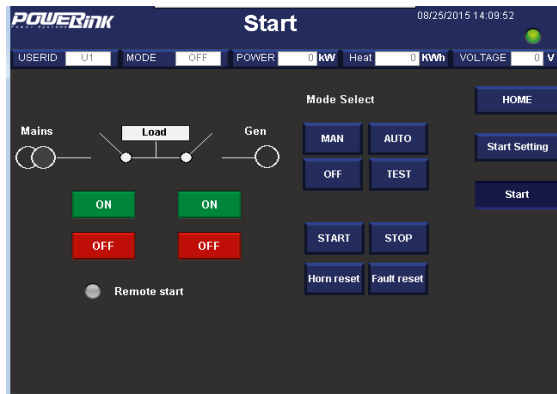
Genset performance data and manufacturing technology

| | | | |
|---------------------------------------|------------|---|---------------------|
| Genset model | TGE1200-NG | Telephone interference factor(TIF) | ≤50 |
| Frequency(Hz) | 50 | Telephone harmonious factor(THF) | ≤2% , as per BS4999 |
| Electrical output power (kW) | 1200 | <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 | 43.7% | | |
| 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 | 2746 | 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(m³/h)@ 100%load | 275 | Excitation method | Brushless |
| 75%load | 212 | Rated ambient temperature(°C) | 40 |
| 50%load | 149 | Rated stator temperature rise(°C) | 125 |

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 well as 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 communication protocol 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

- Alternator protection**
- 2xReverse power
 - 2xOverload
 - 4xOvercurrent
 - 1xOvervoltage
 - 1xUndervoltage
 - 1xOver/underfrequency
 - 1xUnbalanced current
- Busbar/mains protection**
- 1xOvervoltage
 - 1xUndervoltage
 - 1xOver/under frequency
 - 1xPhase sequence
 - 1xROCOF alarm

Standard control functions

- Powercontrol**
- RPM control(synchronization)
 - Power control(grid connection)
 - Load share(island)
- Lubrication control**
- Auto refilling
 - Warning and monitoring
- Fan control**
- Ventilation for engine room
 - Radiator fan
 - Emergency radiator fan
- Engine protection**
- Various routine and customized protection functions
 - Monitoring
- Voltage control**
- Voltage tracking (synchronization)
 - Voltage control(island)
 - PF control(grid connection)
 - Reactive power share (island)
- Pump control**
- Cooling system
 - Emergency radiator
- Valve control**
- Cooling system
 - Heating system
 - Emergency radiator

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 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 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 |