

GXC50-NG

Natural Gas CHP Unit

Standard Basic Module - Open Type

- Highly efficient gas engine
- Highly efficient AC synchronous alternator
- Gas safety train
- Exhaust flue and jacket water heat exchanger
- Heating water and jacket water circulation system
- Advanced engine control system, including: ignition system, speed control system, air/fuel ratio control system
- Strict shop test for all CHP units
- Industrial silencer reduces the noise by 12-20dB(A)
- Separate switch cabinet and electric control cabinet
- Multi-functional control system with easy operation
- Data communication interfaces integrated into control system
- Monitoring battery voltage and charging automatically
- Automatic oil refilling system
- Bus interface for connecting to higher level control unit



Structure and Control Cabinet

Structure Type	Open type
Spraying Process	High quality powder coating
Electrical control cabinet	Integrated, IP54
Noise level @1m, dB(A)	88.1
@ 7m, dB(A)	84.2
@ 10m, dB(A)	80.8

Dimension and Weight

Dimension (LxWxH) , mm	2800x1050x1550
Weight, kg	1800

Special statement :

1. The technical data is based on natural gas with a lower calorific value of 34.2MJ/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.

Power and Efficiency @50Hz

Electric power -kW	50	Electric efficiency	32.3%
Thermal power-kW	70	Thermal efficiency	45.2%
Fuel Input -kW	155	Total efficiency	77.5%

Fuel and Emission

Fuel type	Natural gas
Methane number	MN > 80
Excess air factor (Lambda)	1.2
Fuel consumption @ 100% load, m ³ /h	16.3
Supply gas pressure range (gage pressure), kPa	10~20
Emission without catalytic converter	
NOx , mg/Nm ³	<500mg/Nm ³
CO , mg/Nm ³	<650mg/Nm ³
HCHO (formaldehyde) , mg/Nm ³	<60mg/Nm ³
NMHC , mg/Nm ³	<150mg/Nm ³
Emission with catalytic converter (optional)	
NOx , mg/Nm ³	≤250 mg/Nm ³

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Natural Gas CHP Unit

POWERink
Power Systems
We Produce Green Energy...

Standard Basic Module + Acoustic Attenuated Canopy (Optional)



Dimension and Noise Level

Canopy Size	3000*1050*1550mm
Noise Level@ 1m , dB(A)	75.1
@ 7m , dB(A)	62.2
@ 10m , dB(A)	60.4

- ☐ Modular designed and manufactured for plug and play
- ☐ Environmental friendly low emission
- ☐ Small indoor space required for installation
- ☐ Low noise does not affect the surrounding environment



Standard Basic Module + Acoustic Attenuated Container (Optional)



Dimension and Noise Level	
Optional container (mm) (customized container modeling service available)	<input type="checkbox"/> 7000*2300*2500
	<input type="checkbox"/> 6058*2438*2591
	<input type="checkbox"/> 12192*2438*2896
	<input type="checkbox"/> 12192*3000*2896
	<input type="checkbox"/> 13500*3000*2896
Noise Level@ 1m , dB(A)	73
	@ 7m , dB(A) 60
	@ 10m , dB(A) 58

- ☐ 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



CHP Unit performance data and manufacturing technology

Model	GXC50-NG	Power and efficiency			
Frequency (Hz)	50	Load	100%	75%	50%
Electric output power (kW)	50	Electric power (kW)	50	37.5	25
Thermal output power (kW)	70	Heat power (kW)	70	53	36
Electric efficiency	32.3%	Energy input (kW)	155	115	80
Thermal efficiency	45.2%	Electric efficiency	32.3%	32.7%	31.1%
Total efficiency	77.5%	Heat efficiency	45.2%	46.1%	45%
Heating water temp. outlet(°C)	90~95	Total efficiency	77.5%	78.8%	76.1%
Heating water temp. return(°C)	70~75	Manufacturing technology <ul style="list-style-type: none"> ● Special welded base frame, inner vibration isolators and design for whole lifting ● With high-class paint, endurable brightness as well resistance against abrasion and defacing ● Installation manual, operation and maintenance manual wiring program Standards and certificate <ul style="list-style-type: none"> ● ISO3046 , ISO8528 , GB2820 ● BS5000PT99 , AS1359 , IEC34 ● ISO9001:2008 quality system certification 			
Hot water production @inlet 70°C/outlet 90°C[t/h]	2.85				
Overload runtime at 1.1xSe(hour)	1				
Voltage recovery time(s)	≤4				
Steady-state frequency regulation	±0.5%				
Transient -state frequency regulation	±5%				
Steady-state frequency band	0.5%				
Recovery time response(s)	0.5				
Frequency recovery time(s)	≤3				
Telephone interference factor(TIF)	≤50				
Telephone harmonious factor(THF)	≤2% , as per BS4999				

Gas engine

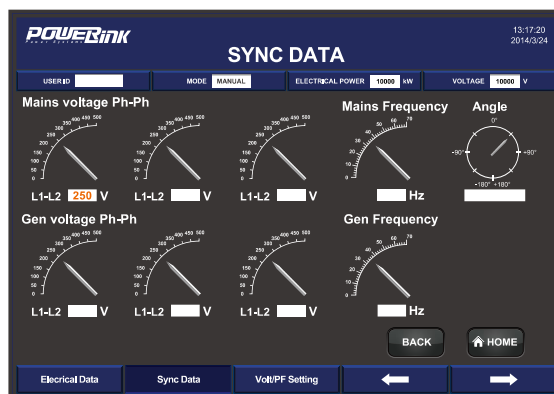
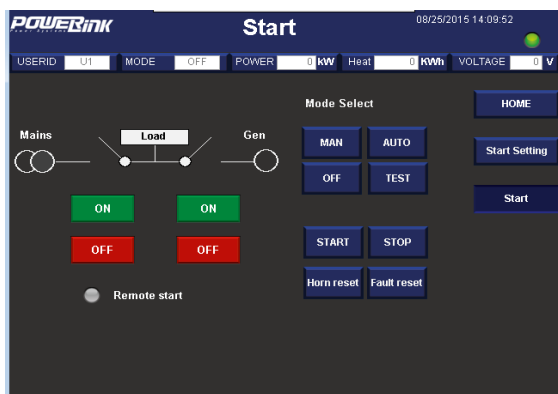
Brand	PowerLink	Energy balance and gas flow	
Model	GX5S-LE02C	Mechanical power (kW)	70
NO. of cylinders	4 in-line	Coolant heat (kW)	30
Bore x Stroke (mm)	105x124	Mixture heat HT(kW)	/
Displacement (L)	4.3	Mixture heat LT(kW)	/
Cooling system	Water cooled	Exhaust heat up to 120°C (kW)	40
Rated speed (rpm)	1500	Fuel Input (kW)	155
Excess air factor	1.2	Combustion air flow(kg/h)	/
Intake system	Turbocharged, intercooled	Exhaust gas flow(kg/h)	282
Lube Oil consumption(kg/h)	0.021	Exhaust gas temperature(°C)	561
Combustion type	Lean burn	Gas consumption(m³/h) @ 100% load	16.3
Battery voltage(V)	24	75% load	12.1
Coolant type	Glycol mixture	50% load	8.4

AC alternator

Brand	PowerLink	Wiring connection	Star
Model	PL2D	Rotor insulation class	H
Rated output power @400V (kW)	70	Winding pitch	2/3
Power factor	0.8	A.V.R. model	MX341
Rated current @400V (A)	126	Voltage fluctuation(no load to full load)	± 0.5%
Excitation system	PMG	Drip proof	IP23
THF (BS EN60034- 1)	<2%	Excitation method	Brushless
TIF (NEMA MG 1-22)	<50	Rated ambient temperature(°C)	40
Winding material	100% copper	Rated stator temperature rise(°C)	125

PCC-300 control system

Programmable control system is adopted with touch screen display , and various functions, including: engine protection and control, paralleling between gensets or gensets and grid, 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, kVA_r, PF, kWh, kVAh
- Grid data: U, I, Hz, kW, kVA_r, 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 solution
- Convenient remote monitor and service
- Simplified engine start/stop control
- Enhanced stability and safety

Standard protection functions	Standard control functions	
Alternator protection <ul style="list-style-type: none">- 2xReverse power- 2xOverload- 4xOvercurrent- 1xOvervoltage- 1xUndervoltage- 1xOver/underfrequency1xUnbalanced current	Powercontrol <ul style="list-style-type: none">- RPM control(synchronization)- Power control(grid connection)- Load share(island)	Voltage control <ul style="list-style-type: none">- Voltage tracking (synchronization)- Voltage control(island)- PF control(grid connection)- Reactive power share (island)
	Lubrication control <ul style="list-style-type: none">- Auto refilling- Warning and monitoring	Pump control <ul style="list-style-type: none">- Cooling system- Emergency radiator
Busbar/ Grid protection <ul style="list-style-type: none">- 1xOvervoltage- 1xUndervoltage- 1xOver/under frequency- 1xPhase sequence- 1xROCOF alarm	Fan control <ul style="list-style-type: none">- Ventilation for engine room- Radiator fan- Emergency radiator fan	Valve control <ul style="list-style-type: none">- Cooling system- Heating system- Emergency radiator
	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 Lockable isolator switch Turbocharger & intercooler	PMG AC alternator H class insulation IP23 protection AVR voltage regulator	Steel monocoque base frame Engine bracket Vibration isolators Alternator base	Air circuit breaker Paralleling control system 10-inch touch screen Communication interfaces Breaker cabinet Mains floating charger Paralleling protection
Gas supply system	Lubrication system	Standard voltage	Intake/ exhaust system
Gas safety train Air/fuel mixer Throttle valve	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 flowmeter Gas leakage protection(Only applicable to canopy and container)
Heat exchange system	Service and documents		
Exhaust heat exchanger Jacket water circulation pump Jacket water heat exchanger Mixture circulation pump Expansion tank Heating circulation pump Three-way constant temp. valves Intercooler radiator	Tools package Installation and operation manual Maintenance manual Software manual Parts manual	Engine operation and maintenance manual Gas quality declaration 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
220V 230V/240V	Three-way catalytic converter	Exhaust gas evaporator LiBr refrigerator