

GXC110-6NG

Natural Gas CHP Unit

Standard Basic Module

- Highly efficient gas engine
- Highly reliable AC synchronous alternator
- Gas train
- Exhaust/water heat exchanger
- Water/water heat exchanger
- Heating circulation system
- Advanced engine control system, including: ignition system, detonation control system, speed control system, air/fuel ratio control system
- Industrial silencer
- Control cabinet and switch cabinet
- Multi-functional control system with simple operation
- Data communication interfaces integrated into control system
- Battery charger
- Automatic oil refilling system
- Island mode or connecting to the grid mode



Structure and Control Cabinet

Dimension and Weight

Dimension (LxWxH) , mm	3700x1150x1750
Weight, kg	2200

Special statement :

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 @60Hz

Electric power -kW	110	Electric efficiency	36.2%
Thermal power-kW	138	Thermal efficiency	50.0%
Fuel Input -kW	276.2	Total efficiency	86.2%

Fuel and Emission

Fuel type	Natural gas
Methane number	MN > 80
Excess air factor (Lambda)	1.58
Fuel consumption @100% load, m ³ /h	27.6
Supply gas pressure range (gage pressure), kPa	10~20

Emission

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

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POWERLink

Power Systems

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Standard Basic Module + Soundproof (Optional)



Dimension and Noise Level

Canopy Size	4000*1150*1750mm
Noise Level@ 1m, dB(A)	78.21
@ 7m, dB(A)	67.9
@ 10m, dB(A)	63.5

- 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



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Natural Gas CHP Unit

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Standard Basic Module + 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
Noise Level@ 1m, dB(A)	76
@ 7m, dB(A)	65
@ 10m, dB(A)	61

- 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



GXC110-6NG

Natural Gas CHP Unit

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CHP Unit performance data and manufacturing technology

Model	GXC110-6NG	Power and efficiency			
Frequency (Hz)	60	Load	100%	75%	50%
Electric output power (kW)	110	Electric power (kW)	110	75	50
Thermal output power (kW)	138	Heat power (kW)	138	103.5	69
Electric efficiency	36.2%	Electric efficiency	36.2%	35.8%	35.5%
Thermal efficiency	50.5%	Heat efficiency	50.0%	49.7%	49.5%
Total efficiency	86.2%	Total efficiency	86.2%	85.5%	85.0%
Heating water temp. outlet(°C)	90~95				
Heating water temp. return(°C)	82~87				
Hot water production @inlet 82°C/outlet 90°C[t/h]	14.0				
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

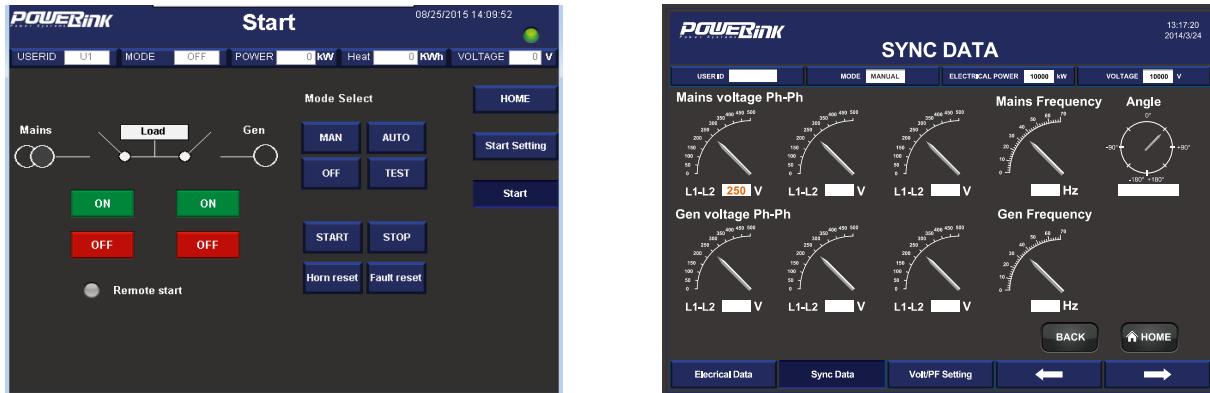
Brand	PowerLink	Energy balance and gas flow	
Model	GX7S-LE02C	Mechanical power (kW)	120
NO. of cylinders	6 in-line	Coolant heat (kW)	61
Bore x Stroke (mm)	105x124	Radiation heat max. (kW)	11
Displacement (L)	6.5	Exhaust heat up to 120°C (kW)	72
Cooling system	Water cooled	Fuel Input (kW)	282
Rated speed (rpm)	1800	Combustion air flow(kg/h)	386
Intake system	Turbocharged, intercooled	Exhaust gas flow(kg/h)	491
Lube Oil consumption(kg/h)	0.03	Exhaust gas temperature(°C)	576
Combustion type	Lean burn	Gas consumption(m³/h) @100% load	27.6
Battery voltage(V)	24	75% load	20.7
Coolant type	Glycol mixture	50% load	13.8

AC alternator

Brand	PowerLink	Wiring connection	Star
Model	PL3DS	Rotor insulation class	H
Rated output power @480V (kW)	112	Winding pitch	2/3
Power factor	0.8	A.V.R. model	MX341
Rated current @480V (A)	202	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, 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
- Grid 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

- Accurate with consumer requirement
- Complete control solution
- Convenient remote monitoring 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/underfrequency - 1xUnbalanced 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)
Busbar/ Gridprotection <ul style="list-style-type: none"> - 1xOvervoltage - 1xUndervoltage - 1xOver/under frequency - 1xPhase sequence - 1xROCOF alarm 	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
	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 Detonation control system Lockable isolator switch Turbocharger & intercooler Jacket water heater	PMG AC alternator H class insulation IP23 protection AVR voltage regulator	Steel monocoque base frame Engine bracket Vibration isolators Alternator base	Air circuitbreaker PCC300 control system 10.4-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 waste oil tank (Only applicable to container)	380/220V 416/240V 440/254V 480/277V	Air filter Exhaust silencer Exhaust bellows Gas leakage protection(Only applicable to canopy and container)
Heat exchange system	Service and documents		
Exhaust/water heat exchanger Jacket water circulation pump Water/water heat exchanger Mixture circulation pump Expansion tank Heating circulation pump Three-way valves Intercoolerradiator	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	

Optional configuration

Engine/Alternator	Electrical system	Gas supply system
Jacket water radiator Space heater Treatments against humidity and corrosion	RCD ATS control cabinet Thermal power gauge Electric power gauge	Gas flow gauge Emergency pressure relief torch Water separator Gas compressor Gas purification device
Voltage	Exhaust system	Exhaust gas using
208V 220V 230V 240V	Three-way catalytic converter	Steam boiler LiBr refrigerator