POWERBOX

NATURAL GAS FIRED CHP **PB 70SNG**

SPECIFICATION DATASHEET

Operation:	Mains parallel Synchronous
Fuel:	Natural gas
Electrical power modulation:	33 kW(e) -70 kW(e) +/-2%
Thermal output:	66 -109 kW(t)(43 –109kW +/-2% with optional bypass)
Electrical efficiency:	35%
Thermal efficiency:	53.1%
Overall efficiency:	88.1%
Flow temperature max:	85° C
Return temperature max:	76° C
Exhaust temperature:	120 ° C
Exhaust gas flow:	204 Nm ³/hr
Exhaust emission at:	CO <600 mg/Nm^3
with optional CAT:	NOx <**40**mg/m^3
	CO <**65**mg/m^3
Voltage:	400 V
Current:	175 A continuous
Power Factor:	cos phi 0.98
Sound Pressure Level:	<65 dBA (at 1 metre)
Fuel Consumption:	204 kW
Combustion and Cooling Air requirements:	4475 m$^{3/}$hr

Engine

Model:	MAN / KVT
Type:	6 cylinder Inline, water cooled 4-stroke, spark ignition

Alternator

Voltage:	400 V
Frequency:	50 Hz
Rated speed:	1550 rpm
Rated Current:	175 Amps
CHPQA rating:	147.7

image for illustration purposes only

Overall Dimensions & Connections

Length	3300	mm
Width	1000	mm
Height	1900	mm
Weight	<2000 kg *(approx)*	
Heating flow	2 inch BSP	
Heating return	2 inch BSP	
Drain	1/2 inch BSP	
Gas connection	1 1/4 inch	

Exhaust

Exhaust connection	3 inch BSP
Exhaust temp	120 Deg C
Max permissible back pressure	15 mB

Operating conditions in plant room

Minimum ambient temp	10 Deg C
Or with pre-heater	5 Deg C
Maximum ambient temp	35 Deg C

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PRIME MOVER UNIT

CONSTRUCTION
- Rigid base frame made of powder coated square section steel tube and profiled steel sections.
- Independent engine and alternator assemblies close coupled with Cush Drive, mounted on four bonded rubber mountings
- Complete hydraulic separation of engine coolant system from building heating
  system via stainless steel plate heat exchanger
- All electrical components are prewired to central connection point
- Frame is further isolated by four anti vibration mounting feet, for the best prevention of structure borne sound transmission.

CASING
- Highly effective sound absorbing enclosure constructed from:
  - Powder coated steel plate
  - Sound deadening material
  - Rockwall thermal insulation
  - Perforated galvanized steel inner skin
  - Removable side panels allow swift access to all components.

HYDRAULIC SYSTEM REQUIREMENTS
- System Kit does not include:
  - Customer circuit water pump.
  - Customer circuit expansion vessel
  - Customer circuit pressure relief valve
  - Customer plate heat exchange interface

EXHAUST SYSTEM
- Water-cooled exhaust manifold, maintenance-free stainless steel heat exchangers and exhaust silencing in unit enclosure.

GAS
- Gas control from DVGW tested assemblies consisting
  - Gas block with integrated multi-gas filter,
  - Pressure regulator,
  - Gas-air mixer with throttle.

CONTROL
- Electronic Speed Control
- Speed sensor and actuator for precise frequency and power control.

CONTROL CABINET

CONSTRUCTION
- Mounted on CH, made of sheet steel 1.5 mm,
- Colour: grey RAL 7035

FEATURES
- Automatic start/stop
- Full system monitoring
- Fault monitoring and fault indication in plain text
- Automatic Power control and modulation
- Lambda control optional
- Timer function to optimise the operating hours
- 5.7" LCD display panel
- Panel mounted keyboard access

MOTOR / GENERATOR PROTECTION
- Overload monitoring
- Reverse power monitoring
- Inlet temperature monitoring
- Flow temperature control
- Oil pressure
- Motor temperature monitoring
- Exhaust temperature monitoring
- Gas Monitoring
- Leakage monitoring
- Generator Temperature Monitoring

METERING
- Electric meters (kWh)
- Hour meter
- Start counter

RECORDING
- Logbook history
- Fault memory

CONTROL
- Main switch with Emergency Stop Function
- Easy access keypad on control panel
- Full remote access and control via modem or broadband
- Fault notification via email
- Interface to BMS via Ethernet UDP, Mod-bus RTU, RK512, 3964R
- Ability to control back up boilers

CONTROL OUTPUTS
- Pulsed output for Circulation pump (e.g. Grundfos UPS)
- Gas valve signal
- External fault signal

CONTROL INPUTS
- External run request
- Boiler room emergency switch signal
- External power requirement

NETWORK PROTECTION FUNCTIONS
- G59 Relay, monitoring voltage, frequency and rate of change of frequency (RoCoF)

PROTECTION
- Short-circuit protection 25A fuse
- G59 Electrical Protection Relay
- Performance Monitoring of CHP system
- Current monitoring of CHP and Electrical Network

SWITCHING TO THE GRID
- Unit has independent starter motor
- Black Start and Island Mode options available

According to our business policy and the continuing development of our products, we reserve the right to change specifications and features without notice.

POWERBOX

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