

## NATURAL GAS FIRED CHP PB 70SNG

### SPECIFICATION DATASHEET

Operation:	Mains parallel Synchronous
Fuel:	Natural gas
Electrical power modulation:	33 kW(e) - 70 kW(e)
Thermal output:	66 - 109 kW(t) (43 - 109kW 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 <sup>3</sup> /hr
Exhaust emission at:	CO <600 mg/Nm <sup>3</sup>
with optional CAT:	NOx <90mg/m <sup>3</sup> CO <110mg/m <sup>3</sup>
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 <sup>3</sup> /hr

#### Engine

Model:	MAN
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

#### Overall Dimensions & Connections

Length	3300 mm
Width	1000 mm
Height	1900 mm
Weight	1500 kg (approx)
Heating flow	2 inch BSP
Heating return	2 inch BSP
Drain	½ inch BSP



*image for illustration purposes only*

#### Exhaust

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

#### Gas connection (wall mounted gas train)

Connection from mains to gas train	1" BSP
Connection from gas train to chp	¾" BSP

#### Operating conditions in plant room

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

# NATURAL GAS FIRED CHP PB 70SNG

## 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

### 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, RK5 I2, 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.*



For information in England and Wales contact Helec Ltd



[www.helec.co.uk](http://www.helec.co.uk)

Helec Ltd  
Lye Cross Road, Redhill,  
Bristol, BS40 5RH  
T: 01934 862264  
F: 01934 863582  
E: [info@helec.co.uk](mailto:info@helec.co.uk)

For information in North England and Scotland contact Hevac Ltd



[www.hevac.ltd.uk](http://www.hevac.ltd.uk)

Unit A, 1 Young Place,  
Kelvin Industrial Estate  
East Kilbride G75 0TD  
T: 01355 248664  
F: 01355 242746  
E: [dmac@hevac.ltd.uk](mailto:dmac@hevac.ltd.uk)