

| Voltage | Prime* |    |
|---------|--------|----|
|         | kVA    | kW |
| 380-415 | 30     | 24 |

| Standby* |      | Ampere |
|----------|------|--------|
| kVA      | kW   |        |
| 33       | 26,4 | 42     |

**Prime Rating** Applicable for supplying continuous electrical power at variable load for unlimited hours. This model can supply 10% overload power for a period of 1 hour in 12 hours operation as it is defined in ISO 3046.

**Standby Rating** Applicable for supplying continuous power at variable load in the event of a utility power failure and overload is not allowed as it is defined in ISO 8528-3.

### Standard Generator Features

- ◊ AMF, Automatic mains failure unit
- ◊ Heavy duty type, 3 cylinder, water cooled engine
- ◊ 50°C tropical type radiator
- ◊ Starter motor
- ◊ Lead acid battery
- ◊ Charging alternator
- ◊ Battery charge redressor
- ◊ Heavy duty, brushless type alternator
- ◊ Base frame with anti-vibration units
- ◊ Industrial type silencers
- ◊ Flexible exhaust compensator
- ◊ Block water heater unit
- ◊ Control panel with digital-automatic main control module
- ◊ Fan, fan drive, charging alternator drive and all rotating parts covered
- ◊ Radiator matrix covered by metal mesh against the mechanical damages
- ◊ Fabricated and welded steel base frame
- ◊ Anti-vibration mountings
- ◊ Engine and alternator manufacturer test reports
- ◊ Factory load, performance and function tests

### Optional Features

- ◊ Automatic load transfer panel
- ◊ Automatic synchronization and power sharing systems
- ◊ Soundproof canopy
- ◊ Container type enclosures
- ◊ Road trailer
- ◊ Job-site trailer
- ◊ Protection circuit breaker
- ◊ Air start
- ◊ Remote type radiator
- ◊ Base fuel tank
- ◊ External type fuel tank
- ◊ Automatic fuel transfer system
- ◊ Residential silencer

### Dimensions & Weight

| Open Type           | Dry Weight<br>kg | Length<br>mm | Width<br>mm | Height<br>mm | Tank Capacity<br>L |
|---------------------|------------------|--------------|-------------|--------------|--------------------|
| KZS30PS             | 850              | 1500         | 750         | 1500         | 122                |
| Sound<br>Attenuated | Dry Weight<br>kg | Length<br>mm | Width<br>mm | Height<br>mm | Tank Capacity<br>L |
| KZS30PS             | 1200             | 2300         | 1000        | 1550         | 267                |

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### Engine Technical Data

|   |                             |
|---|-----------------------------|
| Manufacturer                                      | PERKINS                     |
| Model   | 1103A-33G                   |
| Type  | 4 cycle, water-cooled       |
| Number of cylinders                               | 3                           |
| Cylinder arrangement                              | Vertical in-line            |
| Displacement, Liters                              | 3.3                         |
| Bore X Stroke, mm                                 | 105 X 127                   |
| Compression Ratio                                 | 19.25:1                     |
| Combustion System                                 | Direct injection            |
| Aspiration  | Natural aspiration          |
| Rotation  | Clockwise viewed from front |
| Gross engine power, kWb                           | 31                          |
| Fan Power, kWm                                    | 0.6                         |
| BMEP gross, bar                                   | 7,52                        |
| Combustion air flow, m <sup>3</sup> / min         | 2,15                        |
| Exhaust gas temp.(after turbo), °C                | 520                         |
| Exhaust gas flow (after turbo),m <sup>3</sup> / n | 5,8                         |
| Mean piston speed, m / s                          | 6,35                        |

### Fuel System

|   |                           |
|---|---------------------------|
| Type of injection system                          | Direct injection          |
| Fuel atomiser                                     | Multi-hole                |
| Fuel injection Pump                               | Rotary                    |
| Delivery/hour at 1500rev/min, Lt                  | 120-150                   |
| Governor type                                     | Electronic, Woodward LCG2 |
| ◊ Electronic governor speed control to ISO8528-G2 |                           |
| ◊ Rotary type pump                                |                           |
| ◊ Ecoplus fuel filter                             |                           |

### Electrical System

|  |                 |
|--|-----------------|
| Alternator   | 12 Volt, 65 Amp |
| Starter motor (DC)                                   | 12 Volt         |
| Starter motor power                                  | 3 kW            |
| ◊ Oil pressure and coolant temperature switches      |                 |
| ◊ 12 volt shut off solenoid energised to run         |                 |
| ◊ Glow plug cold start aid and heater/starter switch |                 |

### Cooling System

|   |                           |
|---|---------------------------|
| Type  | Tropical, heavy duty type |
| Ambient temperature, °C   | 50                        |
| Engine&Radiator coolant capacity  | 10.2                      |
| Pressure cap setting, kPa   | 107                       |
| ◊ Thermostatically-controlled system with belt driven circulating pump and pusher fan |                           |
| ◊ Mounted radiator piping and guards  |                           |

### Lubrication System

|                                     |             |
|-------------------------------------|-------------|
| Type                                | Pressurized |
| Capacity, Liters                    | 8.3         |
| Lub oil pressure (min), kPa         | 415-470     |
| ◊ Wet sump with filler and dipstick |             |
| ◊ Spin-on full-flow lub oil filter  |             |

### Fuel Consumption

|                 |            |           |
|-----------------|------------|-----------|
| liters per hour | % 110 Load | 7.9 L     |
|                 | % 100 Load | 7.1 L     |
|                 | % 75 Load  | 5.4 L     |
|                 | % 50 Load  | 3.9 L     |
| grams per kWh   | % 110 Load | 214 g/kWh |
|                 | % 100 Load | 211 g/kWh |
|                 | % 75 Load  | 214 g/kWh |
|                 | % 50 Load  | 232 g/kWh |

| Model            | Standby kW |             | Prime kW    |             |
|------------------|------------|-------------|-------------|-------------|
|                  | Gross      | Net         | Gross       | Net         |
| <b>1103A-33G</b> | <b>31</b>  | <b>30,4</b> | <b>28,2</b> | <b>27,7</b> |

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**Alternator Technical Data**

|  |   |
|--|---|
| Manufacturer                             | STAMFORD  |
| Model                                    | BCI184G   |
| Type                                     | 4-Poles, Rotating Field, Brushless                      |
| Standby power at rated voltage, kVA      | 33  |
| Efficiency, %                            | 86  |
| Power factor                             | 0.8   |
| Phase                                    | 3   |
| Frequency, Hz                            | 50  |
| Speed, Rpm                               | 1500  |
| Voltage, V                               | 380/415   |
| Excitation                               | Self excited  |
| Stator windings                          | 2/3 Pitch factor  |
| Regulation                               | AVR, Auto Voltage Regulator                             |
| Voltage Regulator                        | SX460   |
| Voltage Regulation, %                    | ± 1.5   |
| R.F.I Suppression                        | BS EN 61000-6-2, BS EN 61000-6-4<br>VDE0875G, VDE 0875N |
| Waveform distortion                      | No Load <1.5% Non distorting balanced                   |
| Rotor                                    | Dynamic balanced  |
| Overspeed, Rpm                           | 2250  |
| Short circuit current                    | < 300%  |
| TIF                                      | Less than 50  |
| Insulation class                         | H   |
| Construction                             | Single bearing, direct coupled                          |
| Coupling                                 | Flexible  |
| Stator winding                           | Double layer concentric                                 |
| Connection                               | WYE   |
| Protection class                         | IP23  |
| Cooling air volume, m <sup>3</sup> / sec | 0.095   |

**Winding & Electrical Performance**

All generator stators are wound to 2/3 pitch. This eliminates triplen harmonics on the voltage waveform and is found to be the optimum design for trouble-free supply of non-linear loads. The 2/3 pitch design avoids excessive neutral currents sometimes seen with higher winding pitches, when in parallel with the mains. A fully connected damper winding reduces oscillations during paralleling. This winding, with the 2/3 pitch and carefully selected pole and tooth designs, ensures very low waveform distortion.

**Quality Assurance**

Generators are manufactured using production procedures having a quality assurance level to BS EN ISO 9001.

**Optional Equipment**

- ◊ Anti Condensation Heaters
- ◊ Air Filters
- ◊ RFI Suppression to EC standards
- ◊ Quadrature Droop kit for Parallel Operation
- ◊ SA465 AVR with 1% Regulation and 2 Phase Sensing
- ◊ SX421 or SA465 AVRs for parallel operation
- ◊ SX421 AVR with improved Regulation 0.5% and 3 Phase Sensing (supplied loose)

**Terminals & Terminal Box**

Standard generators feature a main stator with 6 ends brought out to the terminals, which are mounted on the frame at the non-drive end of the generator. A sheet steel terminal box contains the AVR and provides ample space for the customer's wiring and gland arrangements. It has removable panels for easy access.

**Shaft & Keys**

All generator rotors are dynamically balanced to better than BS6861 Part 1 Grade 2.5 for minimum vibration in operation. Two bearing generators are balanced with a half key.

**Insulation / Impregnation**

The insulation system is class 'H'. All wound components are impregnated with materials and processes designed specifically to provide the high build required for static windings and the high mechanical strength required for rotating components.

**Standards**

Newage Stamford industrial generators meet the requirements of BS EN 60034 and the relevant section of other international standards such as BS5000, VDE0530, NEMA MG1-32, IEC34, CSA C22.2-100, AS1359. Other standards and certifications can be considered on request.

| Model          | Standby   |             | Prime     |           |
|----------------|-----------|-------------|-----------|-----------|
|                | kVA       | kW          | kVA       | kW        |
| <b>BCI184G</b> | <b>33</b> | <b>26,4</b> | <b>31</b> | <b>25</b> |

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## Deepsea 7320 Control System

### Description

- ◊ Deepsea 7320 is an Auto Mains(Utility) Failure Control module.
- ◊ The module is used to monitor a mains supply and automatically start a standby generator set.
- ◊ The module can also monitor an extensive number of engine parameters and it can display warnings, shutdown and engine status information on the back-lit LCD screen, illuminated LEDs, remote PC and via SMS text alerts.
- ◊ Selected timers and alarms can be altered by the user from the front panel.
- ◊ Alterations to the system are made using the 810 interface and a PC and it also provides real time diagnostic facilities

### Specification

#### DC SUPPLY

Continuous Voltage Rating: 8 V to 35 V  
 Maximum Operating Current: 340 mA at 12 V, 160 mA at 24 V  
 Maximum Standby Current: 160 mA at 12 V, 80 mA at 24 V  
 Charge Fail/Excitation Range: 0 V to 35 V

#### MAINS(UTILITY) & GENERATOR

Voltage Range: 15 V - 333 V AC (L-N)  
 Frequency Range: 3,5 Hz to 75 Hz

#### OUTPUTS

Output A (Fuel): 15 A DC at supply voltage  
 Output B (Start): 15 A DC at supply voltage  
 Output C & D : 8 A 250 V (Volt free)

#### Input Functions display on LCD

|                        |       |                     |
|------------------------|-------|---------------------|
| Generator Volts        | Volts | L1-N, L2-N, L3-N    |
| Generator Volts        | Volts | L1-L2, L2-L3, L3-L1 |
| Generator Amps         | Amps  | L1, L2, L3          |
| Generator Frequency    | Hz    |                     |
| Mains Volts            | Volts | L1-N, L2-N, L3-N    |
| Mains Volts            | Volts | L1-L2, L2-L3, L3-L1 |
| Mains Frequency        | Hz    |                     |
| Engine Speed           | RPM   |                     |
| Plant Battery Volts    | Volts |                     |
| Engine Hours Run       | Hour  |                     |
| Generator total power  | kVA   | L1, L2, L3,total    |
| Generator total power  | kW    | L1, L2, L3,total    |
| Generator power factor | Cosφ  | L1, L2, L3,total    |

### Features

- 4-Line back-lit LCD text display and five key menu navigation
- LED and LCD alarm indication
- 9 configurable inputs and 8 configurable outputs
- Configurable timers, alarms and event log (250)
- Fuel usage monitor and low fuel alarms
- Charge alternator failure alarm
- Manual speed and manual fuel pump control
- Engine exerciser and "Protections disabled" feature
- kW overload protection
- Power monitoring ( kW, h, kV Ar, kv A h, kV Ar h)
- Load switching (load shedding and dummy load outputs)
- Automatic load transfer and unbalanced load protection
- Independent Earth Fault trip
- Support for up to three remote display units and USB connectivity
- Configurable display languages
- Remote SCADA monitoring
- User selectable RS232 and RS485 communications
- SMS messaging ( external modem required)
- Additional display screens to help with modem diagnostics

### Alarm Channels

- Under/over generator voltage
- Over-current
- Under/over generator frequency
- Under/over speed
- Charge fail
- Emergency stop
- Low oil pressure
- High engine temperature
- Fail to start
- Low/high DC battery voltage
- Reverse power
- Generator phase rotation error
- Generator short-circuit protection
- Loss of speed sensing signal
- Mains out of limits

### Optional Input Functions

|                     |     |
|---------------------|-----|
| Engine Oil pressure | kPa |
| Fuel level          | %   |
| Engine Temperature  | °C  |

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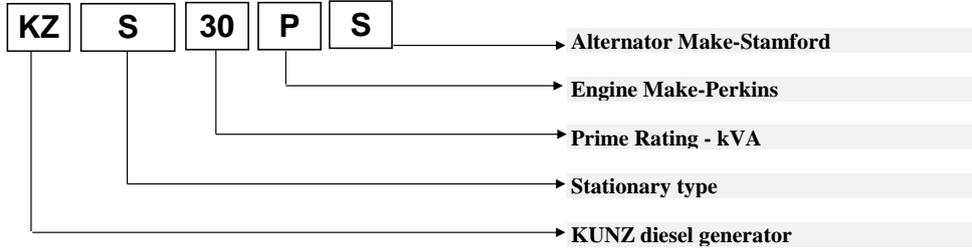
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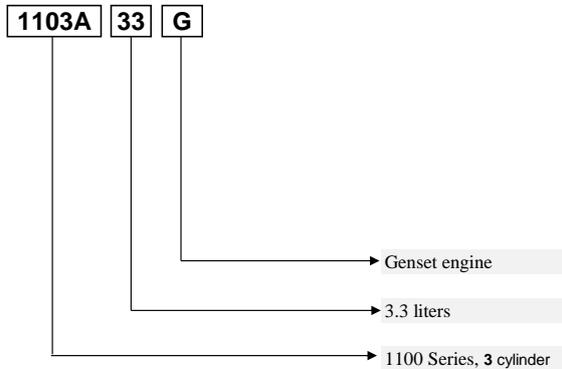
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**Model Codes and General Information**

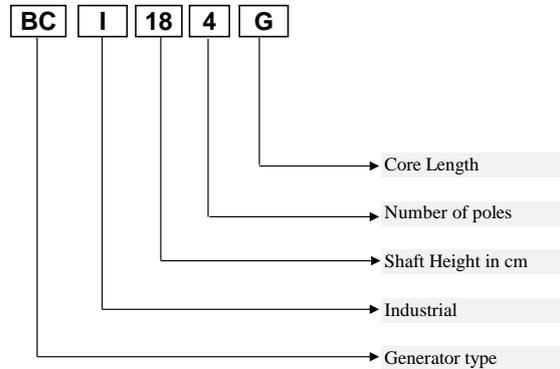
Kunz Diesel Generator



Perkins 1100 Series Diesel Engine



Newage / Stamford Alternator



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