

Voltage	Standby*	
	kVA	kW
380-415	2496,8	1997,5

Prime*		Amp
kVA	kW	
2250	1800	3251

**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, 16 cylinder, water cooled engine
- ◊ 52°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 kg	Length mm	Width mm	Height mm	Tank Capacity L
KZS2250PS	N/A	N/A	N/A	N/A	External
Sound Attenuated	Dry Weight kg	Length mm	Width mm	Height mm	Tank Capacity L
KZS2250PS	N/A	N/A	N/A	N/A	External

## K.U.N.Z. Handels-&Produktions GmbH

**Headquarter**  
Oskar-von-Miller-Strasse 29  
68309 Mannheim, Deutschland  
Tel. : +49 621 - 76 217 733  
Faks: +49 621 - 76 217 734

**U.K. Branch**  
1 Canada Square Canary Wharf, Floor 37  
London, United Kingdom  
Tel. : +44 (0) 20 7718 0185  
Faks: +44 (0) 20 7718 0001

**Turkey Branch**  
Mansuroglu Mh. 295/2 Sk. Ege Sun Plaza  
A Blok No:1 K:6 D:652 Bayrakh, 35535  
Izmir  
Telefax. : +90 232 461 66 91

### Engine Technical Data

Manufacturer	PERKINS
Model	4016-61TRG3
Type	4 cycle, water-cooled
Number of cylinders	16
Cylinder arrangement	60° Vee
Displacement, Liters	61,123
Bore X Stroke, mm	160 X 190
Compression Ratio	13:1
Combustion System	Direct injection
Aspiration	Turbocharge, air to water charge cooled
Rotation	Anticlockwise viewed on flywheel
Gross engine power, kWb	1975
Fan Power, kWm	100
BMEP gross, bar	28,85
Combustion air flow, m <sup>3</sup> / min	160
Exhaust gas temp.(after turbo), °C	475
Exhaust gas flow (after turbo),m <sup>3</sup> / m	490
Mean piston speed, m / s	9,5

### Fuel System

Type of injection system	Direct injection
Fuel injection pump	Combined unit injector
Fuel injector pressure, bar	1400
Delivery/hour at 1500rev/min, Lt	1380
Fuel lift pump type	Tuthill TCH 5
Governing to	Electronic governor to ISO 8528-5 2004

- ◊ Direct fuel injection system with fuel lift pump
- ◊ Digital governing to ISO 8528-5 class G2 with isochronous capability
- ◊ Full-flow spin-on fuel oil filters

### Electrical System

Alternator	24 Volt with integral regulator
Starter motor (DC)	24 Volt
Starter motor power	16,4 kW
◊Turbine inlet temperature shutdown switch	
◊24 volt starter motor and 24 volt alternator with integral	
◊Twin high coolant temperate shutdown switches	
◊Twin low oil pressure shutdown switches	
◊Air shut off valve wiring harness	

### Cooling System

Type	Tropical, heavy duty type
Ambient temperature, °C	52
Engine coolant capacity, Liters	95
Jacket coolant flow Liters/sec	21

- ◊ Two triple thermostats
- ◊ System designed for ambients up to 50°C

### Lubrication System

Type	Pressurized
Lub oil capacity sump min, Liters	157
Lub oil pressure, KPa	400
◊ Wet sump with filler and dipstick	
◊ Full-flow spin-on oil filters	

### Fuel Consumption

liters per hour	Stand by	528 L
	Prime	473 L
	Base Load	373 L
	% 75 Load	346 L
	% 50 Load	235 L
grams per kWh	% 25 Load	127 L
	Stand by	209 g/kWh
	Prime	205 g/kWh
	Base Load	200 g/kWh
	% 75 Load	200 g/kWh
% 50 Load	204 g/kWh	
% 25 Load	220 g/kWh	

Model	Standby kW		Prime kW	
	Gross	Net	Gross	Net
<b>4016-61TRG3</b>	<b>2183</b>	<b>2083</b>	<b>1975</b>	<b>1875</b>

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### Alternator Technical Data

Manufacturer	STAMFORD
Model	PI734G
Type	4-Poles, Rotating Field, Brushless
Prime power at rated voltage, kVA	2200
Efficiency, %	96
Power factor	0.8
Phase	3
Frequency, Hz	50
Speed, Rpm	1500
Voltage, V	380/415
Excitation	Separately excited by P.M.G
Stator windings	2/3 Pitch factor
Regulation	AVR, Auto Voltage Regulator
Voltage Regulator	MX341
Voltage Regulation, %	± 1
R.F.I Suppression	BS EN 61000-6-2, BS EN 61000-6-4 VDE0875G, VDE 0875N
Waveform distortion	No Load <1.5% Non distorting balanced linear load <5.0%
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	2,69

### 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

- ◊ Winding and bearings RTD's
- ◊ Power Factor Controller
- ◊ Quadrature Droop kit for Parallel Operation
- ◊ Winding Protection Thermistors
- ◊ MX321 AVR with 0.5% Regulation and 3 phase sensing
- ◊ Air filters
- ◊ Anti condensation heaters
- ◊ Diode Failure Unit
- ◊ Excitation Loss Module
- ◊ Manual Voltage Regulator and Re-greased bearings

### 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>PI734G</b>	<b>2360</b>	<b>1888</b>	<b>2200</b>	<b>1760</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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 Faks: +49 621 - 76 217 734

#### U.K. Branch

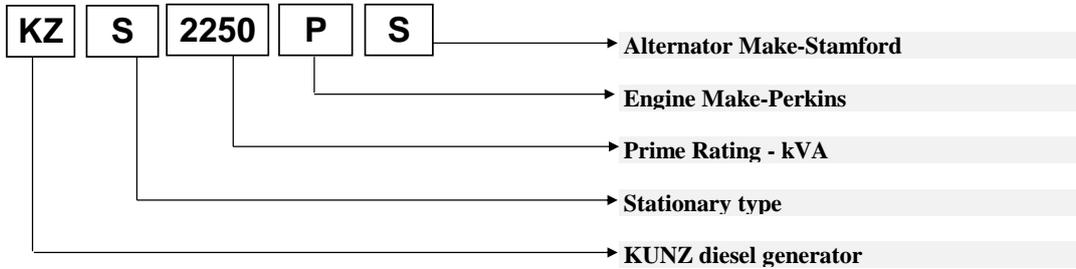
1 Canada Square Canary Wharf, Floor 37  
 London, United Kingdom  
 Tel. : +44 (0) 20 7718 0185  
 Faks: +44 (0) 20 7718 0001

#### Turkey Branch

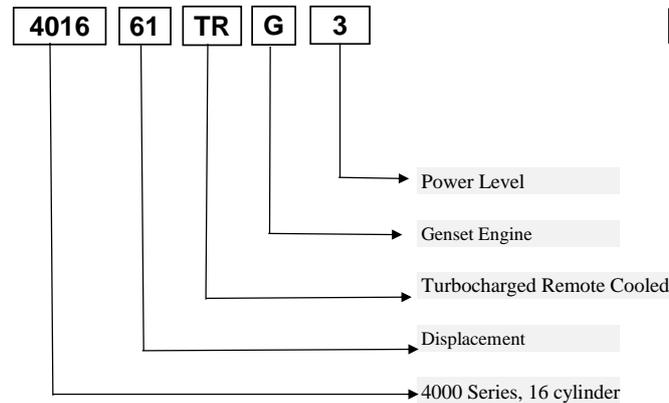
Mansuroglu Mh. 295/2 Sk. Ege Sun Plaza  
 A Blok No:1 K:6 D:652 Bayrakh, 35535  
 İzmir  
 Telefax. : +90 232 461 66 91

### Model Codes and General Information

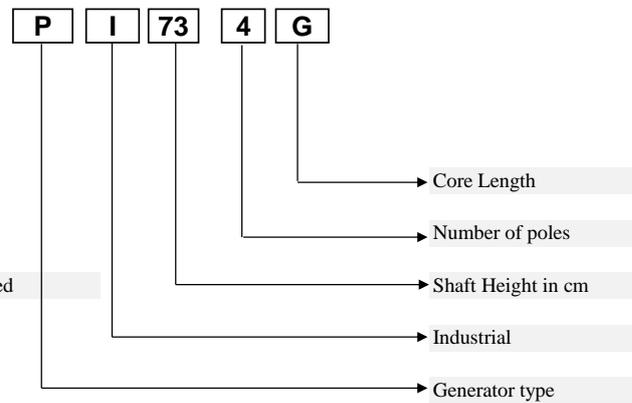
Kunz Diesel Generator



### Perkins 4000 Series Diesel Engine



### Newage / Stamford Alternator



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