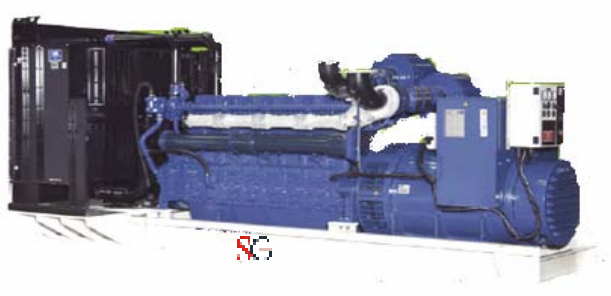
GENSET MODEL
SGP 1010P / 1100S

STERLING
GENERATORS (P) LTD
(A Shapoorji Pallonji Company)



Powered by

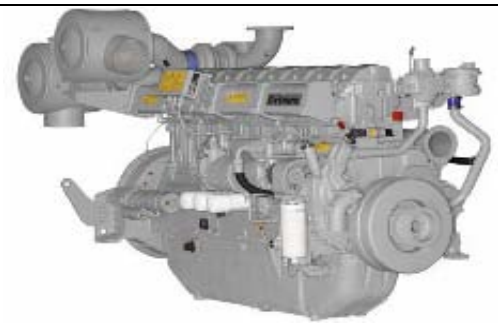
Perkins®

ENGINE MODEL : 4008-TAG2A

ALTERNATOR : Leroysomer / Stamford

GENSET RATING (Radiator/HE Cooled)

	Prime - kVA/kWe	Standby - kVA/kWe
50 HZ	1010/808	1100/880



Perkins Diesel Engines

Perkins history dates back to 1930's
Headquartered in Peterborough, UK
Greater than 2 Billion GBP in sales in 2008
More than 375,000 engines produced annually
Perkins is part of Caterpillar Enterprise worldwide

About Sterling Generators

A Shapoorji Pallonji Company

One of the **largest integrated genset manufacturing facility** in Asia with separate EOU & DTA unit

Facilities to test upto 3000 kW on 415V, 3.3 kV, 6.6 kV & 11 kV

Inhouse acoustic enclosure and control panel (LT/HT/C&R) manufacturing

Nationwide installation and network for Sales and Support

Perkins Powered Sterling Gensets

Sterling provides the range of Perkins powered gensets which are recognized globally

Gensets are designed and tested as per Perkins guidelines
Single window responsibility for Sales, Service and Spares

Genset warranty : Standard 1 year with Unlimited hours of operation

FEATURES

The 4008-TAG2A is a turbocharged and air-to-air chargecooled, in line 8 cylinder diesel engine. Its premium feature provides economic and durable power resulting in exceptional fuel consumption, low emissions and single step block load acceptance

The 4000 Series has been developed using the latest engineering techniques and addresses today's uncompromising demands of the Power Generation industry. Developed from the proven heavy duty industrial base these products offer superior performance and reliability

Rating Definitions

Performance based on ISO 8528/1, ISO 3046/1, BS 5000

Prime Power : Variable load not exceeding 80%. Overload of 10% permitted for 1 hour in every 12 hour of operation

Standby Power : 80% load factor with a maximum of 500 hours running per year

GERMANISCHER LLOYD 1867

ISO 9001:2000

SGP-1010P / 1100S

ENGINE TECHNICAL SPECIFICATIONS

Description	Units	50 HZ
Manufacturer		**Perkins-4008-TAG2A**
Type		Turbocharged, air-to-air charge cooling
Cylinder arrangement	INLINE	8
Displacement	Litres	30.56
Bore and stroke	MM	160 X 190
Compression ratio	Ratio	13.6 : 1
Rated speed	RPM	1500
Altitude capability above MSL	Mtrs	1500
Lube oil & filter change period	Hours	500
Minimum continuous load	Deg C	50
Piston speed	Mtrs/Sec	9.5
Engine kW at rated RPM	kW (HP)	899 kW (1206 HP)
Fuel stop power as per ISO-3046	kW (HP)	985 kW (1321 HP)
Frequency regulation, steady state	%	+/- 0.25
BMEP	kPa	2320
Governor type	-	Electronic, Isochronous (Droop adjustable to 4%)
Governor class	-	ISO 3046-4 Class A1
Engine overspeed shutdown	RPM	1800
Exhaust System		
Exhaust gas flow	m3/min	200
Exhaust gas temperature	Deg C	438
Exhaust back pressure - Max	kPa	8
Exhaust outlet size - Internal	mm	2 X 152
Fuel System		
Type of Injection		Combined Unit Injectors
Injection Pressure	Bar	1400
Lift pump	Type	Gear Driven
Lift pump delivery flow	LPH	660
Lift pump delivery pressure	kPa	300
Maximum suction head at pump inlet	Mtrs	2.5
Fuel filter filtration capacity - Primary	Microns	10
Fuel filter filtration capacity - Secondary	Microns	2
Lube Oil System		
Total System Capacity	Litres	166
Lube oil pressure - at rated speed	kPa	300
Nominal lube oil pressure - Minimum	kPa	240
Lube oil flow rate	LPS	3.7
Maximum oil temperature	Deg C	105
Recommended oil grade		API-CI4
Heat Balance @ 100% Load		
Energy to Exhaust	kWt	698
Energy to Coolant and Oil	kWt	332
Energy to radiation	kWt	80
Energy to Charge air cooler	kWt	200
Overall Thermal efficiency (nett)	%	41
Mechanical efficiency	%	92
Combustion/Air Intake		
Combustion air flow	m3/min	75
Boost pressure ratio		3.7
Max air restriction with clean filter	kPa	1.25
Max air restriction with dirty filter	kPa	3.72
Air filter	Type	Dry paper type - 2 No.
Coolant System		
Total system capacity	Litres	149
Nominal pressure in jacket water	kPa	170
Maximum top tank temperature	Deg C	98
Thermostat operating temperature	Deg C	71 to 85
Coolant flow	LPS	10.0
Radiator Fan power	kWm	38.0
Radiator Fan air flow (With 18 mm of H2O restriction)	m3/min	1350
Radiator ambient capability	Deg C	50
Recommended coolant		Perkins extended life coolant
Radiator pressure cap setting (Minimum)	kPa	70
Engine electrical system		
Type		24V negative earth
Charging alternator volts / Current	VDC / Amps	28 / 40
Starter power	kW	8.2

Consumptions			Litres per Hour	
		SFC	Radiator	HEC
Fuel consumption @ 100%	Gms/kWh / LPH	208	215	206
Fuel consumption @ 75%	Gms/kWh / LPH	202	159	150
Fuel consumption @ 50%	Gms/kWh / LPH	205	111	102
Lube oil consumption	Gms/kWh	0.52		
Specific gravity of fuel considered - 850 gms/Litre		Tolerance of +5% applicable for the above consumptions as per BS-5514/ISO-3046		

SGP-1010P / 1100S

Genset Controllers

SGDS-C1		**SGDS-C3**	

SGDS-C1 : AMF Controller (Standard Supply)

Features:

Auto Start /Stop.

Local & Remote Start/Stop

Genset Breaker and Mains Breaker Control.

Easily accessible.

MODBUS for BMS connectivity.

Display

Engine Parameters. - RPM, Oil Pressure, Coolant Temperature,

Hour Meter, Battery Volts, Battery Charging Voltage

Running Status.

Event Recording.

Fault Code display.

Electrical Parameters

Voltage, Current, Hz, KW, KVA, Pf, kWh and KVAr.

Breaker Status.

Engine Protection

High Water Temperature

Low Lube oil Pressure

Engine overspeed shutdown

Electrical Protection

kW Overload

Unbalanced Load

Under/Over Frequency

Under/Over Voltage

SGDS-C3 Automatic Genset Controller (Optional).

Features:

AMF & Synchronising Controller

Synchronising up to 16 Genset each with individual controller

Momentarily Mains paralleling

Auto load sharing

Load dependent start /stop

Load limiting Device

Need based Priority change over / power management (Programmable)

Genset Breaker and Mains Breaker Controller

Auto Start / Stop

Local & Remote Start/Stop

MODBUS for BMS connectivity

Engine ECU diagnostics via CAN interface

Display

Engine parameters

RPM, Engine Oil Pressure, Coolant Temperature, Battery Volts, Hour Meter

Battery Charging Volts, Fuel Level, No. of Start Attempts,

Event Recording , Fault code display, Running status

Electrical parameters

Voltage, Current, Frequency, kVA Total, kW Total, PF, kWh, kVAr,

Phase sequence, Synchroscope display, Bus Volts, Bus Frequency, Bus phase sequence,

Breaker status

Protection

Engine protection

High Water Temperature, Low Lube oil Pressure, Engine Overspeed, Warning &

Shutdown for High Battery voltage and current, Crank failure,

Electrical protection

Under voltage / over voltage (27/59)

Under frequency/ over frequency (81)

Reverse power (active and re-active) (32)

Over Current (2 Level) (51)

Loss of excitation (40)

Negative Phase sequence

Generator phase sequence

Generator Earth fault

Current unbalance (46)

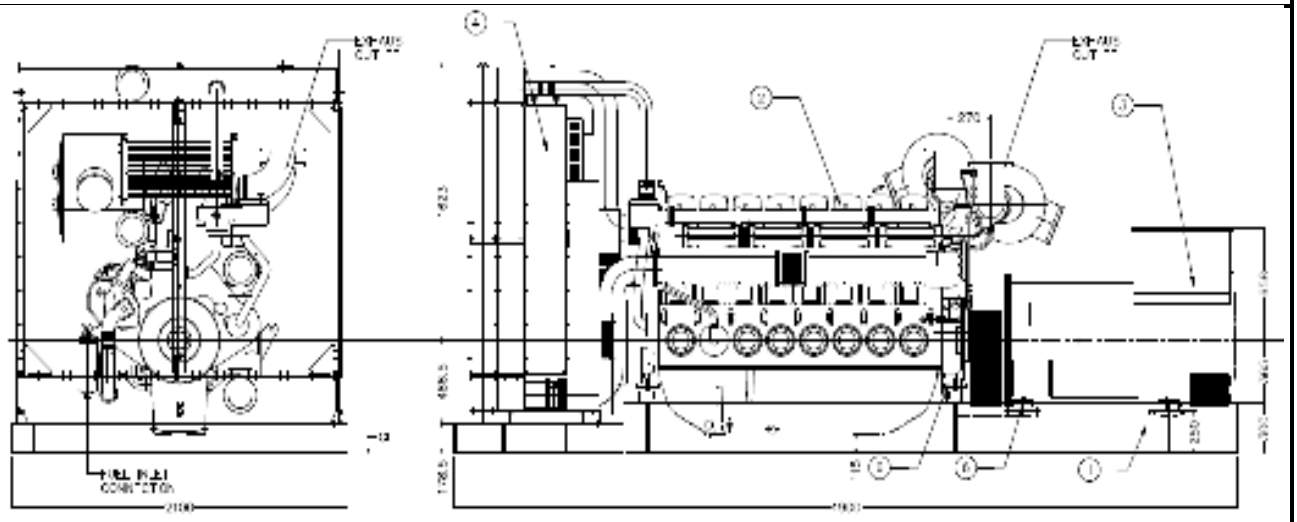
ROCOF/Vector shift

Sync fail

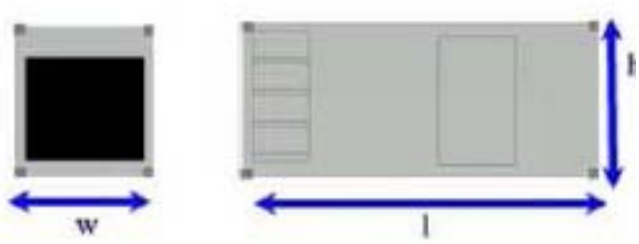
SGP-1010P / 1100S

Sterling Standard Scope of Supply	OPTIONALS
Basic Engine	**Engine**
Cylinder block	Jacket water heater - 110V/240V
Flywheel housing - SAE 0	Lube oil heaters
High inertia flywheel - SAE J620 size 18	Dual electric starters
Oil pan	Critical Silencers
Forged crankshaft	Additional Manuals
Forged connecting rods	
Four-valve per cylinder, Individual cylinder head	
Aluminium Pistons	**Control Panel**
Piston cooling via oil spray nozzle	Standard Breaker Panels
Dry exhaust manifolds	Remote Announciators
Vibration damper	AMF Panel
Mounted air filter	Auto/Manual Synchronising Panel
All necessary on-engine air, exhaust, coolant, fuel and oil pipework	Auto Load Sharing/Load dependant Panel
Starting System	IP 54/55 Enclosure
Electric starter	Isolator Panel
Battery charging alternator, V-belt driven	Project Specific/Custom built Panels
Battery, Battery stand & Leads	H T Panels for 1000 kVa & above ratings
Engine wiring harness and sensors	L T Distribution Boards
	PCC/MCC Panels
Fuel System	PLC Panels
Combined unit Injectors	
Heinzman Digital Governor and Pandaros actuator mounted on engine	
Governing to ISO 8528-5 class G2 with isochronous capability	**Alternator**
Replaceable fuel filter elements with primary filter and water separator	Space Heaters
Fuel Cooler	RTD/BTD with Scanners
Lube Oil System	Oversized alternator
Lube oil circulation pump with safety valve	IP 54/55 Enclosure
Lube oil filter	HT Alternators - 1000 kVA & above
Lube oil cooler	PMG
Oil filler neck and oil dipstick for measurement	Differential CT mounted on alternator
Open crankcase venting system	Different cooling options
Combustion Air System	**Others**
Exhaust turbocharger	Accoustic enclosures - For 1010 kVA and above
Air ro Air cooler - Inbuilt with radiator	Additional Spare Parts Manuals
Exhaust flexible bellows - 1 nos.	Additional O&M Manuals
Exhaust Silencers - Residential	Ni-cad Starting Batteries & Chargers
Air filter with contamination indicator	Fuel level sensors
Cooling System	Lube Oil Priming Pump - Electric/Manual
Gear driven coolant pump	Heavy Duty Air Cleaners
Belt driven fan	Soot Arrestors
Radiator with Fan, fan drive and fan guard	Exhaust Scrubbers
Engine Mounting	Containerized Gensets
Front engine mounting bracket	Duplex fuel filters
Resilient engine mounts (Rubber Elements) on engine free end and driving end	Multi spring vibration Isolators
Alternator mounts (Rubber Elements) (AVM between eng/alt and base frame)	DG Sets for special applications
Genset Management System - SGDS-C2 (Supplied as standard)	**Genset Controllers**
Electronic controller for indicating genset parameters	SGDS-C1 Controller - Digital display module
Emergency stop push button	SGDS-C3 Controller - Auto Sync Module
Genset monitoring and display of Engine-alternator operating parameters and alarms	SGDS-C4 Mains Controller - For Grid Paralleling
Genset protection against critical operating parameters	PLC based load management system
- Automatic start sequence control	
- Acquisition and display of plant-related measuring data	
- Communication with an external system	
Generator	
415 Volts, 50 HZ, 1500 RPM, 4 pole, Single BEARING, 3 phase	
connected with IP23 protection. Alternator confirms to IS-4722 or equavalent	
Paintwork	
Standard paintwork, single-coat, water-based	
Documentation	
Standarad Factory test report	
Engine alternator test certificate	
Warranty certificate	
Set of standard operating and maintenance documentation & Spare parts manual	

SGP-1010P / 1100S



Acoustic Enclosure (Cap On Type)		STD 40 Foot Container for Export	
Length	8500	Length	12192
Width	2400	Width	2438
Height	3800	Height	2591
Wieight in Kgs (Wet)	12500(apprx.)	Weight in Kgs (Wet)	14000(apprx.)



WEIGHT		9000 KG.(APPROX.)
6	AVM	POLYBOND PGS
5	FUEL PRE FILTER	SEPAR
4	RADIATOR	PERKINS
3	ALTERNATOR	LSC 62L1
2	ENGINE	PERKINS 4008–TAG2A (PART NO. Z13539)
1	BASE FRAME	SGPL
PART NO.	DESCRIPTION	MAKE/MODEL

Head Quarters

Sterling & Wilson Powergen (P) Ltd.,
8, Sundaram Estate
Govandi Station Road
Govandi East
Mumbai - 400 088
Tel : 022 - 2552 6100
Fax : 022 - 2552 6200
Website: www.sterlinggenerators.com

Works

Sterling Generators (P) Ltd.,
Survey No. 59, 343/1
Village kala, Kherdi, Khanvel
Silvassa 396230
U.T. of Dadra & Nagar Haveli
Tel : 0260 - 2677408 / 419
Fax : 0260 - 2677408
E-Mail : silvassa@sterlinggenerators.com

Marketing & Support offices

Zonal Office - South	Zonal Office - North	Zonal Office - East	Zonal Office - West
Sterling & Wilson Powergen (P) Ltd., Sterling Towers, No. 4A/14, 4th Main Road, Chikka Adugodi New Layout Tavarekere Main Road, Bangalore - 560 029 Tel : 080 - 67178600 - 609 Fax : 080 - 67178675	Sterling & Wilson Powergen (P) Ltd., Sterling & Wilson House, C-56/38, Institutional Area, Sector 68, Noida - UP Tel : 0120 - 407 1000 Fax : 0120 - 407 1030	Sterling Generators (P) Ltd., BF - 164, Sector 1, Salt Lake City, Kolkata - 700 064 Tel : 033 - 2337 3933 Fax : 033 - 4005 5416	Sterling & Wilson Powergen (P) Ltd., 8, Sundaram Estate Govandi Station Road Govandi East Mumbai - 400 088 Tel : 022 - 2552 6100 Fax : 022 - 2552 6200

BRANCHES

Hyderabad Chennai Coimbatore	Jaipur Chandigarh	Bhubaneshwar	Baroda Pune

Authorized Dealer