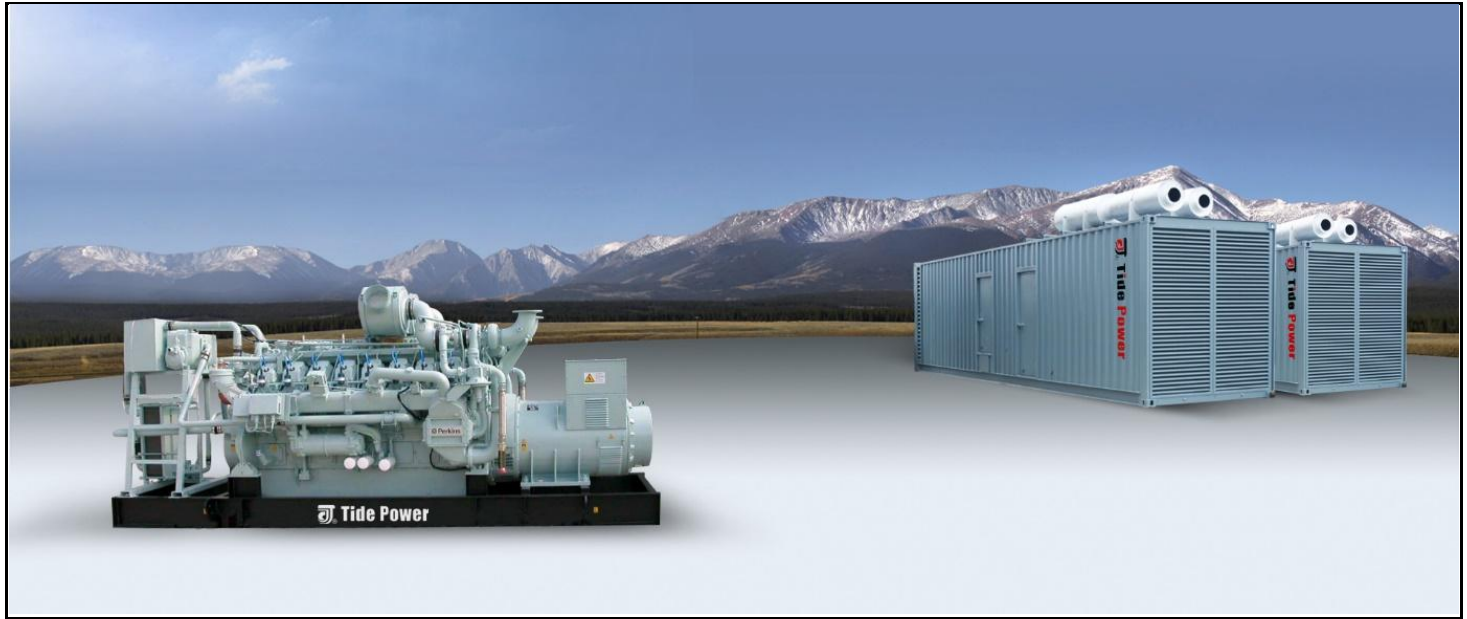


Natural Gas Generator set data sheet (01-01-2018)

Continuous 425 kWe, Natural Gas



Gas Generator Set Model:	TPE531G	Gas Engine Model:	UK Perkins 4008-30TRS1	Alternator Model:	Leroy Somer LSA 47.2 L9
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50Hz 1500 r.p.m	3 Phase 4 Wires	Power Factor: Cos ϕ = 0.8	Emissions Standard	TA luft (NOx)
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RATINGS ²⁾	Prime Power		Continuous Power		Rated Current	Thermal Output	Efficiency	
	(PRP)		(COP)				Electrical	Thermal ³⁾
Voltage (V)	kW	kVA	kW	kVA	Amps	kW	η (%)	
380/220	N/A	N/A	425	531	807.2	584	39.4%	54.2%
400/230	N/A	N/A	425	531	766.8	584		
415/240	N/A	N/A	425	531	739.1	584		
440/254	N/A	N/A	425	531	697.1	584		

Conditions and Defintions:

- 1) COP are applicable for supplying continuous electrical power for full load operations, there is no overload available.
- 2) Engine output data under ISO8528/1, ISO3046/1, BS5541/1, DIN6271 conditions, performance tolerance : $\pm 5\%$

Genset General Specifications

Gas Genset model	TPE531G	Electrical efficiency	39.4%
Gas Engine model	4008-30TRS1	Thermal efficiency	54.2%
Electrical output (kW/kVA)	425/531	Total efficiency	93.6%
Fuel	Natural gas	Speed regulating rate	0-5% Adjustable
Frequency (HZ)	50	Dimension (lengthxwidthxheight) (mm)	4400x2060x2256
Speed (rpm)	1500	Net Weight (kg)	6400

Engine Specifications

Manufacturer	UK Perkins
Model	4008-30TRS1
Mechanical power	447 kWm
Speed	1500 rpm
Configuration / number of cylinders	Vertical, In line / 8
Bore / Stroke	160/190 mm
Displacement	30.56 L
Compression ratio	12.0:1
Mean piston speed	9.5 m/s
Firing Order	1-4-7-6-8-5-2-3
Direction of rotation	Anti-clockwise viewed on flywheel
Speed Governor	Heinzmann
Ignition system	Altronic
Induction system	Turbocharged
Combustion type	Spark ignition
Cooling mode	Radiator

Cooling system

Total coolant capacity (engine only)	48 Litres
Jacket coolant flow	36 m ³ /h
Jacket coolant entry/exit temperature (max)	88/96 °C
Charge coolant flow	30 m ³ /h
Charge coolant entry temperature	45 °C

Lubrication system

Total lubricating oil capacity	165.6 Litres
Sump min-max	127-154 Litres
Oil consumption	0.14 g/kW.h
Maximum Lubricating oil temperature	105 °C
Oil grade	API CD or higher, sae 15W-40

Induction system

Maximum air intake restriction of engine	
Clean filter	1.2 kPa
Dirty filter	3.7 kPa
Air filter type	1 of dry type

Gas Inlet System

Air-Gas mixing system	Heinzmann
Gas inlet pressure	1.5-25 kPa
Aftercooler temperature	40

Exhaust system

Maximum back pressure for total system	5.8 kPa
Exhaust gas flow	5481 m ³ /h
Exhaust gas temperature (max) after turbo	487 °C
Exhaust outlet flange size	1 x 152 mm

Combustion air system

Combustion air mass flow (25°C)	2416kg/h
Combustion air volume flow (25°C)	2067m ³ /h

Fuel system

Gas Methane No.	≥75
Lower calorific value	34.71 MJ/Nm ³
Gas consumption at 100% load	118 m ³ /h
Gas consumption at 75% load	91 m ³ /h
Gas consumption at 50% load	66 m ³ /h

Electrical system

Type	Insulated return
Starter motor voltage	24 V
Starter motor power	7.5 kW
Minimum cranking speed	120 rev/min

Thermal Data

Energy in exhaust	353 kW
Energy to coolant and oil	193 kW
Energy to radiation	72 kW

Alternator Specifications

50HZ/1500R.P.M

Manufacture / Brand	Leroy-Somer
Model	LSA47.2L9
AVR model	R250
Coupling / Bearing	Direct /Single bearing
Phase	3 Phase
Power factor	Cos ϕ = 0.8
Winding pitch - code	2/3 - (N° 6S)
Drip proof	IP 23
Excitation	Shunt

Prime output power	428kW/535kVA
Insulation class	H
Voltage regulation	± 0,5 %
Totale Harmonic distortion THDno load < 1.5% - on load < 2%	
Waveform: NEMA = TIF	< 50
Number of wires	12 (N° 6) / 6 (N° 6S)
Altitude	≤ 1000 m
Overspeed	2250 min ⁻¹
Air flow	0.9m ³ /s

Control Panel



- Deep sea DSE7320 controller
 - Digital control panel
 - Volts, current, frequency, rpm (instruments)
 - Genset running hours
 - Battery voltage and charging
 - Over speed pre-alarm & shutdown
 - High water temp. pre-alarm & shutdown
 - Low oil pressure pre-alarm & shutdown
 - Low voltage pre-alarm & shutdown
 - Overcurrent pre-alarm & shutdown
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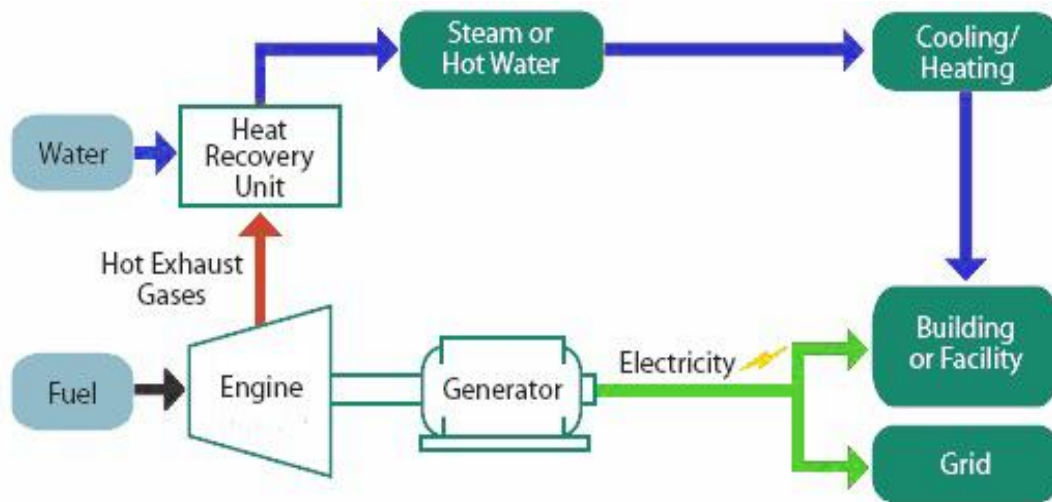
Standard Features

- High efficient water cooled gas engine
- Brushless alternators (Class H, with AVR.)
- Heavy duty rubber anti-vibration mountings
- Starter batteries and connecting cables
- Separate engine-drive battery charging alternator
- Industrial silencer for open type generator sets
- Breaker
- Maintenance free battery
- Low coolant level sensor
- Oil filter - Air filter
- Fully welded steel baseframe
- Ignition system
- Gas train: ball valve, gas filter, gas pressure regulator, pressure gauge, electromagnetic valve;
- Wiring with IEC standard
- Factory test certificate
- Operation & Maintenance manual & Diagrams
- Worldwide product / Technical support

Optional

- Automatic Transfer Switch (ATS)
- 20FT or 40FT silent containerised box
- Water heater for severe cold weather
- Lub-oil heater for severe cold weather
- Horizontal motorized radiator
- Residential silencer
- Panel for auto synchronization with Mains
- Extra air filters for time-maintenance
- Automatic oil supply system
- Extra oil filters for time-maintenance
- Parallel cabinet
- Full range of attachments and options available for alternator
- Flame arrestor in gas train
- Desulfurization system
- Gas pretreatment system
- Dehydration system
- Genset Commissioning / Testing on site

Combined Heat and Power Systems



We offer Combined Cooling Heating and Power (CHP and CCHP) packages for our gas generator sets. It can recover 75%-90% combined electrical and thermal efficiency, resulting in major reductions in your overall energy costs. In the past years we have supplied CHP systems to Germany, Russia,Indonesia etc. We have the experience and capabilities to meet your total energy requirements.

Warranty

The goods of Tide Power Technology are under warranty against defects in materials and workmanship for period 1 year or 2000 hours operation time whichever come first from the date of delivery to the end user (except the damageable spare parts of genset caused by incorrect man-made operation), and that the aforementioned warranty for the same token is back up by the engine (8000 hours no limited operation time) & alternator manufactures and their global distributors.