

## 4000 Series

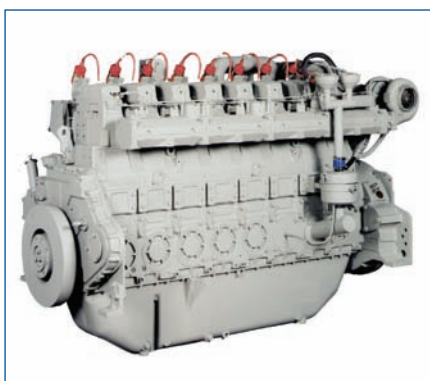
### 4008-30TRS1

### 4008-30TRS2

#### Spark Ignited Gas Engine

447 kWm at 1500 rpm

526 kWm at 1500 rpm



Developed from a proven engine range that offers superior performance and reliability, the 4008-30TRS is designed to meet the future demands of the power generation industry for clean, efficient gas fuelled engines.

The 4008-30TRS 8-cylinder spark ignition gas engine offers high performance, dependability and reliability while meeting the market's increasingly stringent emission requirements.

The 4008-30TRS is a turbocharged, air to water charge cooled, 8 cylinder inline gas engine, designed for operation on a wide range of methane based gases. Its premium features and design provide economic and durable operation as well as exceptional mechanical efficiency and power to weight ratio, whilst offering improved emissions. The overall performance and reliability characteristics make this the prime choice for today's power generation industry.

#### Economic power

- Utilises advanced combustion technology to deliver durable and reliable power.
- High commonality of components with other engines in the 4000 Series family for reduced stocking levels.
- Individual large valve cylinder heads with matched deep bowl pistons for greater swirl, achieve high mechanical efficiency.

#### Reliable power

- Developed and tested using the latest engineering techniques.
- Piston temperatures controlled by an advanced gallery jet cooling system.
- Extended durability and attention to reducing servicing with extended component life add benefit of the reduced whole life cost.

#### Compact, clean and efficient power

- Exceptional power-to-weight ratio and compact size give optimum power density for ease of transportation and installation.
- In excess of 40% mechanical efficiency.
- Designed to provide excellent service access for ease of maintenance.
- Engines to comply with major international standards.
- All engines in the 4000 Series family are capable of meeting the NOx requirements of TA Luft.

Engine Speed (rev/min)	Type of Operation	Typical Generator Output (Gross)	
		kWe	Gross Engine Power kWm
4008-30TRS1	Continuous Operating Power	425	447
4008-30TRS2	Continuous Operating Power	500	526

The above ratings represent the engine performance capabilities to conditions specified in ISO 8528/1, ISO 3046/1:1986, BS 5514/1. Derating may be required for conditions outside these; consult Perkins Engines Company Limited.

Generator powers are typical and are based on an average alternator efficiency and a power factor (cos.  $\theta$ ) of 1.

Fuel specification: Natural gas having a Lower Calorific Value of 34.71 MJ/m<sup>3</sup>.

#### Rating Definitions

Continuous Operating Power: Power available for true Base load, rating as defined in ISO 8528/1, BS 5514/1 – No overload permitted.

# 4000 Series

## 4008-30TRS1&2

### Spark Ignited Gas Engine Electronit/Cogen Specification

#### Air inlet and exhaust

- Mounted air filter – replaceable cartridge type
- Dry exhaust manifolds
- Exhaust manifold shielding (supply on Cogen only)
- High efficiency turbocharger

#### Governing, gas and ignition system

- Air/Fuel mixer with zero pressure regulator and mixture adjustment screw
- Metal braided flexible gas connection
- Altronic 800 'C' Series ignition system with individual cylinder ignition coils, spark plugs
- Digital governing system, governing to ISO8528-5 class G2

#### Lubrication system

- Gear driven, externally mounted lubricating oil pump
- Wet sump with filler and dipstick
- Full-flow replaceable canister type oil filters
- Jacket water cooled shell and tube oil cooler/stabiliser
- Closed circuit crankcase ventilation system – natural gases only

#### Cooling system

- Pressurised jacket water cooling system, gear-driven jacket water circulating pump – supply on Electronit only
- Air to water charge cooler, pipe work - supply on Electronit only
- Jacket water thermostatic control - supply on Electronit only

#### Electrical equipment

- 24 volt starter motor
- 24 volt 70 amp battery charging alternator with integral voltage, regulator and activating switch – supply on Electronit only
- High coolant temperature
- Low oil pressure switch
- High manifold pressure switch
- Digital knock detection (supply on TRS2 only)

#### Flywheel and Housing

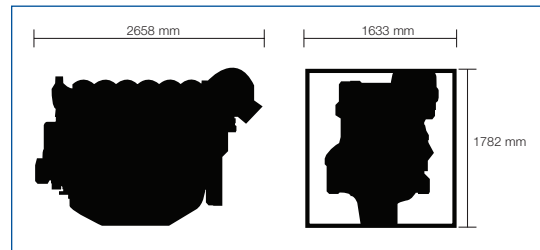
- High inertia flywheel to SAE J620 Size 14
- SAE 'O' flywheel housing

#### Mountings

- Front and rear engine mounting support

#### Literature

- User's Handbook and Parts Manual



#### General Data

Number of cylinders	8
Cylinder arrangement	Vertical in-line
Cycle	4 stroke
Induction system	Turbocharged and air-to-water charge cooled
Combustion system	Spark ignited
Cooling system	Water cooled
Bore and stroke	160 x 190 mm
Displacement	30.56 litres
Compression ratio	12.0:1
Direction of rotation	Anti-clockwise viewed on flywheel
Total lubrication system capacity	165.6 litres
Total coolant capacity	48 litres
Length	2658 mm *2559
Width	1633 mm *1418
Height	1782 mm *1782
Dry weight	3350 kg
*Cogeneration unit	

#### Optional Equipment

- Engine specification suitable for running on landfill gas, digester gas, biogas and coal bed mine gas. (please contact Perkins Engines Company Limited for details and limitations)
- 220 / 240 Volt thermostatically controlled immersion heater
- Three way thermostatic valve for charge cooler cooling circuit
- Mechanically driven water pump for charge cooler circuit
- Exhaust temperature monitoring
- Tool kit
- Additional manuals

Designation	Cogeneration unit		Electro unit	
	TRS1	TRS2	TRS1	TRS2
Fuel Consumption gross at 1500 rev/min	kJ/kW	kJ/kW	kJ/kW	kJ/kW
Continuous Baseload Rating	2.51	2.47	2.54	2.50
75% of Prime Power Rating	2.58	2.53	2.61	2.56
50% of Prime Power Rating	2.81	2.70	2.84	2.73
25% of Prime Power Rating	3.63	3.38	3.66	3.41

Fuel consumption figures are for TA Luft compliant engines at ISO 8528/1 in "Cogen" engine specification, running on British natural gas with LCV 34.71 MJ/Sm<sup>3</sup>



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