

# Bioas Generator Set Data Sheet (01-01-2016)

**Rated 500kWel, Biogas**



|                                 |          |                          |             |                          |                                    |
|---------------------------------|----------|--------------------------|-------------|--------------------------|------------------------------------|
| <b>Gas Generator Set Model:</b> | TPS625BG | <b>Gas Engine Model:</b> | TPG12V-71BG | <b>Alternator Model:</b> | Siemens Licensed<br>1FC5 456-6TA42 |
|---------------------------------|----------|--------------------------|-------------|--------------------------|------------------------------------|

|                           |                           |  |                           |     |
|---------------------------|---------------------------|--|---------------------------|-----|
| <b>50Hz</b><br>1000 r.p.m | <b>3 Phase</b><br>4 Wires | <b>Power Factor:</b><br>Cos $\phi$ = 0.8 | <b>Emissions Standard</b> | N/A |
|---------------------------|---------------------------|--|---------------------------|-----|

| RATINGS        | Prime Power<br>(PRP) |            | Standby Power<br>(LTP) |            | Rated Current<br>(A) | Remarks |
|----------------|----------------------|------------|------------------------|------------|----------------------|---------|
|                | kW                   | kVA        | kW                     | kVA        |                      |         |
| Voltage (V)    |                      |            |                        |            | Amps                 |         |
| 380/220        | 500                  | 625        | N/A                    | N/A        | 949.6                |         |
| <b>400/230</b> | <b>500</b>           | <b>625</b> | <b>N/A</b>             | <b>N/A</b> | <b>902.1</b>         |         |
| 415/240        | 500                  | 625        | N/A                    | N/A        | 869.5                |         |
| 440/254        | 500                  | 625        | N/A                    | N/A        | 820.1                |         |

**Conditions and Defintions:**

1) Engine output data under ISO8528/1, ISO3046/1, BS5541/1, DIN6271 conditions.

## Genset General Specifications

|                         |             |                                  |                 |
|-------------------------|-------------|----------------------------------|-----------------|
| Gas genset model        | TPS625BG    | Frequency (Hz)                   | 50              |
| Gas engine model        | TPG12V-71BG | Speed (rpm)                      | 1000            |
| Electrical output (kW)  | 500         | Speed regulating rate            | 0-5% Adjustable |
| Electrical output (kVA) | 625         | Open type dimension (L×W×H) (mm) | 5120×2040×2778  |
| Fuel                    | Biogas      | Net weight (kg)                  | 11800           |

## Engine Specifications

|                     |                       |                                |                                 |
|---------------------|-----------------------|--------------------------------|---------------------------------|
| Manufacturer        | Tide Power Technology | Direction of rotation          | Counter clockwise from flywheel |
| Model               | TPG12V-71BG           | Induction system               | Turbocharged & Intercooled      |
| Mechanical power    | 552 kWm               | Combustion type                | Spark ignition                  |
| Speed               | 1000 rpm              | Cooling method                 | Water cooled                    |
| Configuration       | V-type                | Speed governor                 | Electronic                      |
| Number of cylinders | 12                    | Oil Consumption                | ≤ 1.6 g/kW.h                    |
| Cycle               | 4 stroke              | Coolant capacity (engine Only) | 400 L                           |
| Cylinder type       | Wet                   | Oil capacity                   | 200 L                           |
| Bore / Stroke       | 190/210 mm            | Heat consumption               | 11-12MJ/kW.H                    |
| Displacement        | 71.45 L               | Oil grade                      | 15W40-CF4 or above grade        |
| Compression ratio   | 12:01                 | Starting method                | 24V DC motor                    |

## Alternator Specifications

**50HZ/1000R.P.M**

|                      |                          |                            |                        |
|----------------------|--------------------------|----------------------------|------------------------|
| Manufacture / Brand  | Siemens Licensed         | Prime output power         | 500kW/625kVA           |
| Model                | 1FC5 456-6TA42           | Insulation class           | F                      |
| Coupling / Bearing   | Flexible /Double bearing | Voltage regulation         | ± 1 %                  |
| Phase                | 3 Phase                  | Type of mounting           | IM B20                 |
| Power factor         | Cos φ = 0.8              | Type of cooling            | Cooling by oneself fan |
| Winding pitch - code | 2/3 - (wdg6)             | Altitude                   | ≤ 1000 m               |
| Drip proof           | IP 23                    | Overspeed                  | 2250 min <sup>-1</sup> |
| Excitation           | Brushless                | Temperature of environment | 40°C                   |

## Control Panel



- Czech Comap IG-NT control panel with synchronization function.
- 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

## 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
- Circuit breaker - 3 pole (MCCB)
- 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

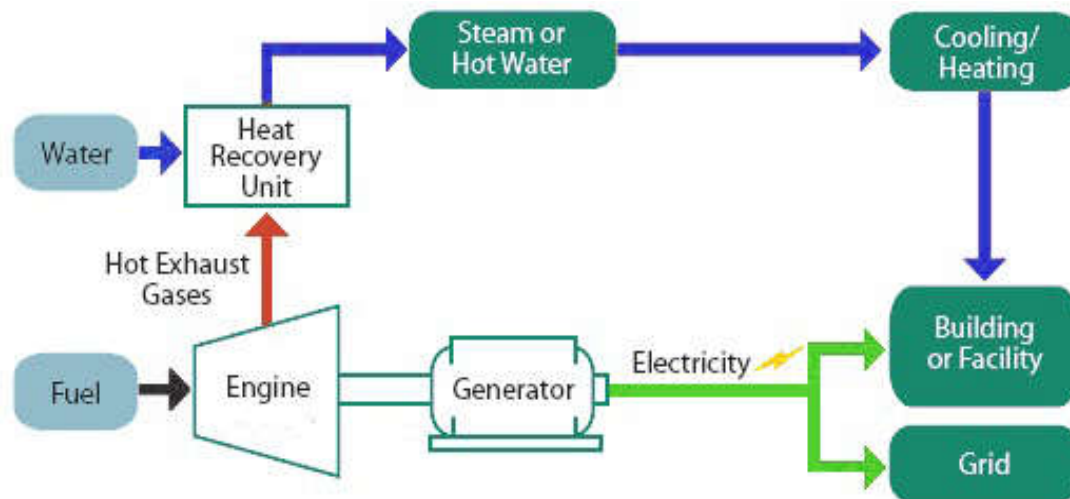
## Optional

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- Automatic Transfer Switch (ATS)
- Radiator or cooling tower
- Water heater for severe cold weather
- Lub-oil heater for severe cold weather
- Silent containerised
- Residential silencer
- Panel for auto synchronization with Mains
- Extra air filters for time-maintenance
- Automatic oil supply system
- Breaker cabinet
- 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

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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

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The goods of Tide Power Technology are under warranty against defects in materials and workmanship for period of 12 months after shipment arrival to the customer or 2000 hours operation 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 & alternator manufactures and their global distributors.