

# Biogas Generator Set Data Sheet (2018-08-01)



## Rated 100kWel, Biogas

|                                 |          |                          |             |                          |                        |
|---------------------------------|----------|--------------------------|-------------|--------------------------|------------------------|
| <b>Gas Generator Set Model:</b> | TMN125BG | <b>Gas Engine Model:</b> | E0836 LE302 | <b>Alternator Model:</b> | Leroy Somer LSA44.3 M6 |
|---------------------------------|----------|--------------------------|-------------|--------------------------|------------------------|

|                           |                           |  |                           |     |
|---------------------------|---------------------------|--|---------------------------|-----|
| <b>50Hz</b><br>1500 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 |            | Standby Power |            | Rated Current | Remarks |
|----------------|-------------|------------|---------------|------------|---------------|---------|
|                | (PRP)       |            | (LTP)         |            | (A)           |         |
| Voltage (V)    | kW          | kVA        | kW            | kVA        | Amps          |         |
| 380/220        | 100         | 125        | N/A           | N/A        | 189.9         |         |
| <b>400/230</b> | <b>100</b>  | <b>125</b> | <b>N/A</b>    | <b>N/A</b> | <b>180.4</b>  |         |
| 415/240        | 100         | 125        | N/A           | N/A        | 173.9         |         |
| 440/254        | 100         | 125        | N/A           | N/A        | 164.0         |         |

### Conditions and Defintions:

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

## Genset General Specifications

|                         |             |                                  |                 |
|-------------------------|-------------|----------------------------------|-----------------|
| Gas genset model        | TMN125BG    | Frequency (Hz)                   | 50              |
| Gas engine model        | E0836 LE302 | Speed (rpm)                      | 1500            |
| Electrical output (kW)  | 100         | Speed regulating rate            | 0-5% Adjustable |
| Electrical output (kVA) | 125         | Open type dimension (L×W×H) (mm) | 2100*1100*1400  |
| Fuel                    | Biogas      | Net weight (kg)                  | 1750            |

## Engine Specifications

|                     |             |                            |                                 |
|---------------------|-------------|----------------------------|---------------------------------|
| Manufacturer        | MAN         | Direction of rotation      | Counter clockwise from flywheel |
| Model               | E0836 LE302 | Induction system           | Turbocharged & Intercooled      |
| Mechanical power    | 110 kWm     | Combustion type            | Spark ignition                  |
| Speed               | 1500 rpm    | Cooling method             | Water cooled                    |
| Configuration       | In line     | Ignition & Speed governor  | Motortech                       |
| Number of cylinders | 6           | Oil Consumption            | 0.125kg/h                       |
| Cycle               | 4 stroke    | Coolant filling quantity   | 16L                             |
| Cyliner type        | Wet         | Oil capacity               | 34L                             |
| Bore / Stroke       | 108/125 mm  | Heat consumption 100% load | 9.2MJ/kW.H                      |
| Displacement        | 6.87L       | Starting method            | 24V DC motor                    |
| Compression ratio   | 11:1        |                            |                                 |

|                      |                        |                                |                             |
|----------------------|------------------------|--------------------------------|-----------------------------|
| Manufacture / Brand  | Leroy-Somer            | Prime output power             | 100kW/125kVA                |
| Model                | LSA44.3 M6             | Insulation class               | H                           |
| AVR model            | R250                   | Voltage regulation             | ± 0,5 %                     |
| Coupling / Bearing   | Direct /Single bearing | Totale harmonic distortion THD | no load < 2% - on load < 5% |
| Phase                | 3 Phase                | Wave form : NEMA = TIF - (*)   | < 50                        |
| Power factor         | Cos $\phi$ = 0.8       | Number of wires                | 12                          |
| Winding pitch - code | 2/3 - (N° 6S)          | Altitude                       | ≤ 1000 m                    |
| Drip proof           | IP 23                  | Overspeed                      | 2250 min <sup>-1</sup>      |
| Excitation           | Shunt                  | Air flow                       | 0.25 m <sup>3</sup> /s      |

### **Control Pannel---Motortech Control System**

Gen-set controller for single or multiple generating sets operating in standby or parallel modes

Support of engines with ECU (Electronic Control Unit)

Many communication options – easy remote supervising and servicing

Gen-set performance log for easy problem tracing

Automatic synchronizing and power control (via speed governor or ECU)

AMF function, Baseload, Import / Export, Peak shaving, Voltage and PF control (AVR)

Generator measurement, Mains measurement

Controller redundancy

Integrated PLC programmable functions

### **Standard Features**

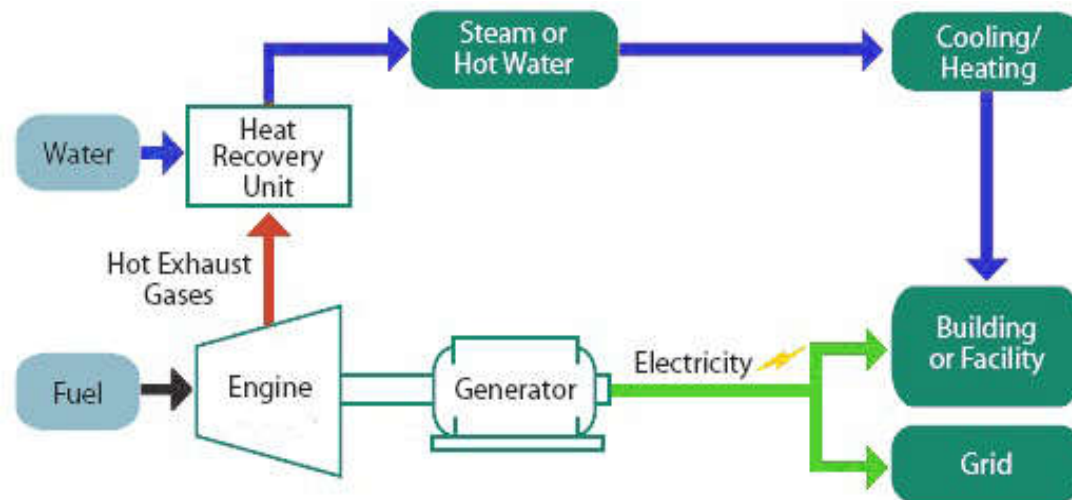
- High efficient water cooled gas engine with radiator
- Brushless alternators (Class H, with AVR.)
- Heavy duty rubber anti-vibration mountings
- Starter batteries and connecting cables
- Separate engine-drive battery charging alternator
- Industrial silencer for open type generator sets
- Circuit breaker - 3 pole (MCCB)
- Low coolant level sensor
- Oil filter - Air filter
- Fully welded steel baseframe
- Ignition system
- Gas train: mainly Italy Madas gas pressure regulator & gas filter, pressure gauge,electromagnetic valve and fire arrestor and other connection components
- Wiring with IEC standard
- Factory test certificate
- Operation & Maintenance manual & Diagrams
- Worldwide product / Technical support

### **Optional**

- Automatic Transfer Switch (ATS)
- Canopy/Enclosure
- 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
- 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 Comissioning / Testing on site

## Combined Heat and Power Systems ( Optional )

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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 1 year or 8000 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 & alternator manufactures and their global distributors.