

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



## Rated 230kWel, Biogas

<b>Gas Generator Set Model:</b>	TMN288XB G	<b>Gas Engine Model:</b>	E2676 LE212	<b>Alternator Model:</b>	Leroy Somer LSA46.3 M7
---------------------------------	---------------	--------------------------	-------------	--------------------------	---------------------------

<b>60Hz</b> 1800 r.p.m	<b>3 Phase</b> 4 Wires	<b>Power Factor:</b> 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	230	287.5	N/A	N/A	436.8	
400/230	230	287.5	N/A	N/A	415.0	
415/240	230	287.5	N/A	N/A	400.0	
<b>440/254</b>	<b>230</b>	<b>287.5</b>	<b>N/A</b>	<b>N/A</b>	<b>377.3</b>	

### Conditions and Defintions:

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

## Genset General Specifications

Gas genset model	TMN288XBG	Frequency (Hz)	60
Gas engine model	E2676 LE212	Speed (rpm)	1800
Electrical output (kW)	230	Speed regulating rate	0-5% Adjustable
Electrical output (kVA)	287.5	Open type dimension (L×W×H) (mm)	2900*1100*1500
Fuel	Biogas	Net weight (kg)	2000

## Engine Specifications

Manufacturer	MAN	Direction of rotation	Counter clockwise from flywheel
Model	E2676 LE212	Induction system	Turbocharged & Intercooled
Mechanical power	250kWm	Combustion type	Spark ignition
Speed	1800 rpm	Cooling method	Water cooled
Configuration	In-line	Ignition & Speed governor	Motortech
Number of cylinders	6	Oil Consumption	0.15kg/h
Cycle	4 stroke	Coolant filling quantity	50L
Cylinder type	Wet	Oil capacity	70L
Bore / Stroke	126/166mm	Heat consumption 100% load	9.2MJ/kW.H
Displacement	12.4L	Starting method	24V DC motor
Compression ratio	12.6:1		

Manufacture / Brand	Leroy-Somer	Prime output power	252kW/315kVA
Model	LSA46.3 M7	Insulation class	H
AVR model	R250	Voltage regulation	± 0,5 %
Coupling / Bearing	Direct /Single bearing	Totale harmonic distortion THD <sub>load</sub>	< 2.5% - on load < 2.5%
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	0.58m <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**

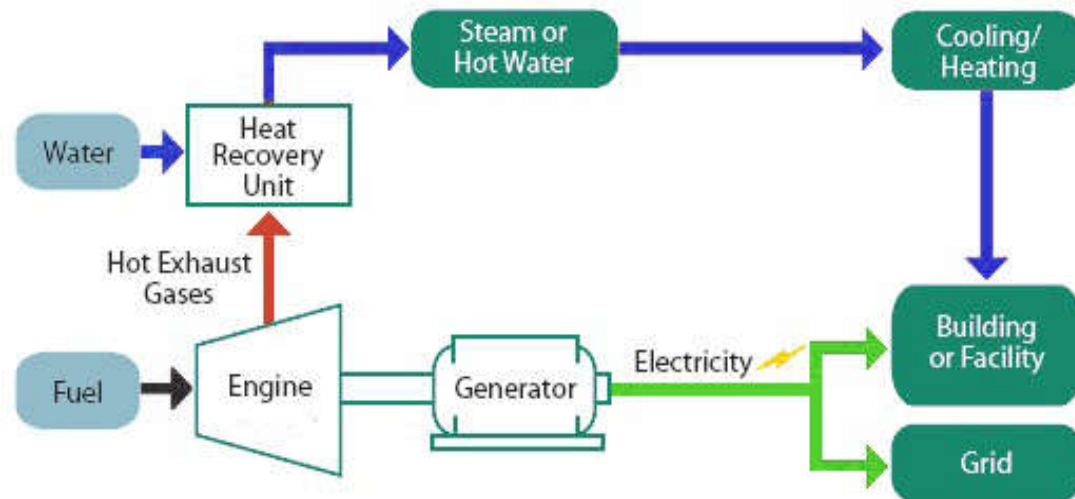
- High efficient water cooled gas engine with radiator
- Brushless alternators (Class H, with AVR.)
- Heavy duty rubber anti-vibration mountings
- Starter batteries and connecting cables
- Separate engine-drive battery charging alternator
- Industrial silencer for open type generator sets
- Circuit breaker - 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 )

---



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 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.