



HIMOINSA[®]
THE ENERGY

Model: **HRTW-1235 T6**

RENTAL RANGE
Powered by MITSUBISHI



- 20 FT
- WATER-COOLED
- THREE PHASE
- 60 HZ
- DIESEL

Generating Rates



SERVICE		PRP	STANDBY
Power	kVA	1391	1543
Power	kW	1113	1234
Rated Speed	r.p.m.	1.800	
Standard Voltage	V	480/277	
Available Voltages	V	416/240 - 440/254 - 460/265	
Rated at power factor	Cos Phi	0,8	



HIMOINSA Company with quality certification ISO 9001
HIMOINSA gensets are compliant with EC mark which includes the following directives:

- EN ISO 13857:2008 Machinery safety.
- 2006/95/EC Low voltage.
- 89/336/EEC Electromagnetic compatibility.
- 2000/14/EC Sound Power level. Noise emissions outdoor equipment. (amended by 2005/88/EC)
- 97/68/EC Emissions of gaseous and particulate pollutants. (amended by 2002/88/EC & 2004/26/EC)

Ambient conditions of reference: 1000 mbar, 25°C, 30% relative humidity. Power according to ISO 3046 normative.

PR.P Prime Power - ISO 8528 : prime power is the maximum power available during a variable power sequence, which may be run for an unlimited number of hours per year, between stated maintenance intervals. The permissible average power output during a 24 hours period shall not exceed 80% of the prime power. 10% overload available for governing purposes only.

Standby Power (ISO 3046 Fuel Stop power): power available for use at variable loads for limited annual time (500h), within the following limits of maximum operating time: 100% load 25h per year – 90% load 200h per year. No overload available. Applicable in case of failure of the main in areas of reliable electrical network.

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Engine Specifications 1.800 rpm

ENGINE		60Hz	
		PRP	STANDBY
Rated Output	Kw	1165	1295
Manufacturer		MITSUBISHI	
Model		S12R PTA	
Engine Type		Diesel 4 strokes-cycle	
Injection Type		Direct	
Aspiration Type		Turbocharged and aftercooled	
Cylinders Arrangement		12V	
Bore and Stroke	mm	170x180	
Displacement	L	49,03	
Cooling System		Water	
Engine Specifications		API CD or CF SAE 30 or SAE 40	
Compression Ratio		14,0:1	
Fuel Consumption Stand By	l/h	315,2	
Fuel Consumption 100% PRP	l/h	282,3	
Fuel Consumption 75 % PRP	l/h	214,5	
Fuel Consumption 50 % PRP	l/h	152,9	
Fuel Consumption 25 % PRP	l/h	90,6	
Lube Oil consumption full load	g/kwh	0,8	
Total Oil Capacity	L	180	
Total Coolant Capacity	L	345	
Governor	Type	Electronic	
Air Filter	Type	Dry	
Inner diameter exhaust pipe	mm	304	



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Generator

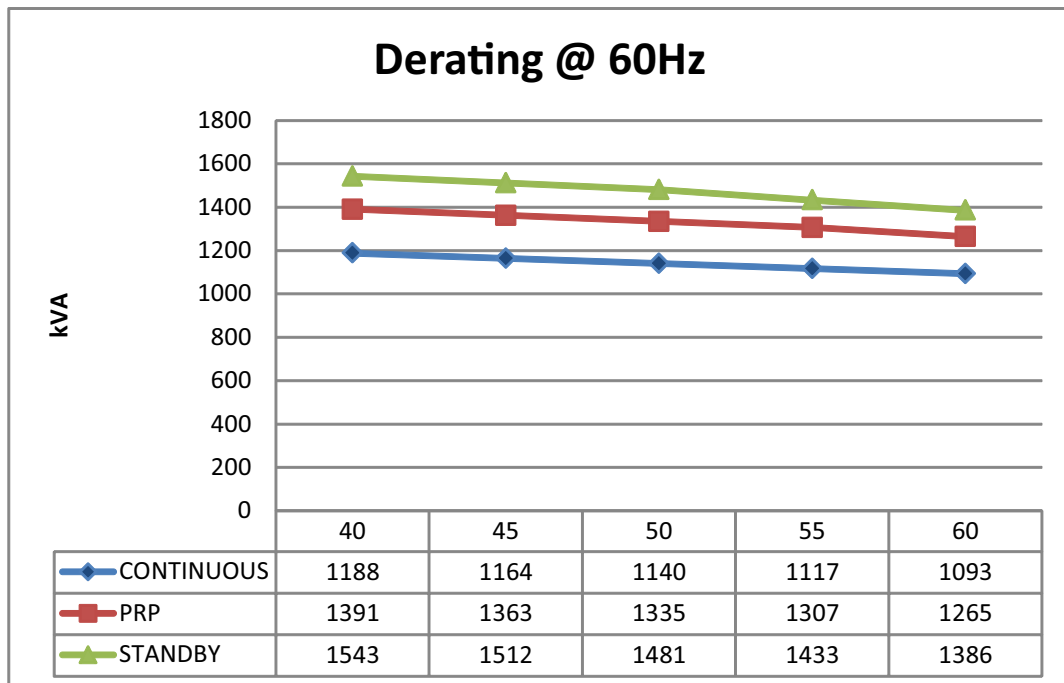
Generator		
Poles	Num	4
Winding Conections (standard)		Star
Frame Mounting		S-0 21"
Insulation	Class	H class
Enclosure (according IEC-34-5)		IP23
Exciter System		self-regulating brushless
Voltage Regulator		A.V.R. (Electronic)
Steady Voltage Precision		Within $\pm 1\%$
Bearing		Single bearing sealed
Coupling		Flexible disc
Coating type		Standar (Vacuum impregnation)





Derating

Ambient Temperature	60HZ					
	CONTINUOUS		PRP		STANDBY	
	KVA	KW	KVA	KW	KVA	KW
40°C	1188	950	1391	1113	1543	1234
45°C	1164	931	1363	1090	1512	1209
50°C	1140	912	1335	1068	1481	1184
55°C	1117	893	1307	1046	1433	1147
60°C	1093	874	1265	1012	1386	1109





Application Data

Exhaust System		1800 r.p.m
Maximum exhaust temperature 100% Stand By	°C	520
Exhaust Gas Flow 100% Stand By	m3/min	287
Maximum allowed back pressure	mm H2o	600
Exhaust Flange Size (external diameter)	mm	358
Heat evacuated through exhaust pipe	KCal/Kwh	626,53

Air Inlet System		1800 r.p.m
Intake Air Flow 100% Stand By	m3/min	109
Cooling Air Flow 100% Stand By	m3/min	1640
Alternator fan air flow	m3/s	1,961

Starting System		
Starting Motor	Kw	7,5 x 2
Starting Motor	CV	10,2 x 2
Recommended Battery Capacity	Ah	400
Auxiliary Voltage	Vcc	24
Starting current	Cranking	400A
	Rush	1250A

Fuel System		
Fuel Oil Specifications		ASTM D975NO.2 or BS2869 class A
Maximum power suction pump	mm Hg	75
Maximum return feed pump	mm Hg	150
Fuel Tank	L	1.000



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Synchronizing Panel

Automatic control panel WITHOUT ATS (Automatic Transfer Switch) and WITHOUT mains control with thermal magnetic protection (according to voltage and number of phases) and Earth leakage protection, composed by:

- Control and power electric panel, with measurements devices and controller (according to necessity and configuration), both fitted on the Genset.
- 4P automatic circuit breaker (one for each set) of suitable rated current completed with motorized driver 230Vac, opening coil MN 12/24Vdc and aux. contacts.
- Earth leakage adjustable protection (time [inst 0,2 0,5 3 5 sec] & sensibility [30 300mA 3A]);
- Battery Charger 3A 230Vac;
- Engine water preheating.



Controller

The controller is an easy to use multi-generator loadshare system, designed to synchronise up to 32 generators including electronic and non-electronic engines. The controller monitors the generator and indicates operational status and fault conditions, automatically starting or stopping the engine on load demand or fault condition. System alarms are annunciated on the LCD screen (multiple language options available), illuminated LED and audible sounder. The event log will record 250 events to facilitate easy maintenance. An extensive number of fixed and flexible monitoring, metering and protection features are included as well as comprehensive communication and system expansion options. Using the PC Configuration Suite Software allows easy alteration of the operational sequences, timers and alarms. With all communication ports capable of being active at the same time, the controller is ideal for a wide variety of demanding load share applications.





Controller

KEY LOAD SHARE FEATURES:

- Peak lopping
- Sequential set start
- Manual voltage/frequency adjustment
- R.O.C.O.F. and vector shift
- Generator load demand
- Automatic hours run balancing
- Mains (Utility) de-coupling
- Mains (Utility) de-coupling test mode
- Dead bus sensing
- Bus failure detection
- Direct governor and AVR control
- Volts and frequency matching
- kW and kV Ar load sharing

KEY BENEFITS

- RS232 & RS485 can be used at the same time
- DSENet connection for system expansion
- PLC functionality
- Auto voltage sensing
- Five step dummy load support
- Five step load shedding support
- High number of inputs and outputs
- Worldwide language support
- Configuration Suite PC software
- Direct USB connection to PC
- Ethernet monitoring
- USB host
- Data logging & trending

KEY FEATURES

- Comprehensive loadshare capabilities
- Configurable inputs (11)
- Configurable outputs (8)
- Voltage measurement
- Built-in governor and AVR control
- kW overload alarms
- Comprehensive electrical protection
- Magnetic pick-up
- Electronic engine capability
- RS232 & RS485 remote communications
- Modbus RTU
- PLC functionality
- Multi event exercise timer
- Back-lit LCD 4-line text display
- Multiple display languages
- Automatic start/Manual start
- Audible alarm
- Fixed and flexible LED indicators
- Event log (250)
- Engine protection
- Fault condition notification to a designated PC
- Front panel mounting
- Protected front panel programming
- PC configuration
- Configurable alarms and timers
- Configurable start and stop timers
- SMS alert messaging
- Remote monitoring



Controller_ALARMMS

ENGINE ALARMS

1. High coolant temperature.
2. Low oil pressure.
3. Battery charge alternator
4. Start failure.
5. Low water level.
6. Fuel storage.
7. Overspeed.
8. Under speed.
9. Low battery voltage.
10. High coolant temperature by sensor.
11. Low oil pressure by sensor.
12. Low fuel level by sensor.
13. Unexpected shutdown.
14. Stop failure.
15. Low engine temperature.
16. Genset voltage drops.
17. Emergency stop.

GENERATOR ALARMS

1. Over-load
2. Unbalanced voltage
3. Over voltage
4. Under voltage
5. Over frequency
6. Under frequency
7. Over load
8. Short-circuit
9. Inverse Power
10. Incorrect phase sequence
11. Asymmetry among phases
12. Emergency stop

Controller_READINGS

ENGINE READINGS

Coolant temperature
Oil pressure
Fuel level (%)
Battery voltage
R.P.M.
Battery charge alternator voltage

GENERATOR READINGS

Voltage among phases
Voltage among phases and neutral
Amperage
Frequency
Apparent power (kVA)
Active power (kW)
Reactive power (kVAr)
Power factor



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Controller_PROTECTIONS

ENGINE PROTECTIONS

- High water temperature
- High coolant temperature by sensor
- Low engine temperature by sensor
- Low oil pressure
- Low oil pressure by sensor
- Low coolant level
- Unexpected shutdown
- Fuel storage
- Fuel storage by sensor
- Stop failure
- Battery voltage failure
- Battery charge alternator failure
- Overspeed
- Under speed
- Start failure
- Emergency Stop

ALTERNATOR PROTECTIONS

- High frequency
- Low frequency
- High voltage
- Low voltage
- Short-circuit
- Asymmetry among phases
- Incorrect phase sequence
- Inverse power
- Overload
- Genset signal droop

Controller_OPERATING MODE

1. Locked | OFF. Controller is switched off, it is not allowed any operation on the Genset, all sequences are blocked. This has to be configured for maintenance operation.

2. Manual Mode | MAN. Gensets starts through frontal command, breaker closing is manual but all protection devices are activated..

3. Automatic Mode | AUTO.

a. Parallel with main| LOAD SHARING. Genset and the main work together sharing the load.

Back-Synch is not available.

b. Parallel with main | BASE LOAD. Genset and the main work together. Genset works at a fixed power.

Back-Synch is not available.

c. Parallel with main | PEAK SHAVING. Genset and the main work together. The main is the main supplier and the Genset supplies peaks. Back-Synch is not available.

Pictures are indicative, components features may change at any time.



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Generating Sets Standard and Optional Features

Engine

- Low coolant level sensor
- Exhaust gases compensator
- Standard air filter
- Standard fuel filter
- Standard oil filter
- Oil temperature sensor
- Diesel engine
- 4 strokes-cycle
- Water-cooled
- 24V Electrical system
- Remote cooling radiator
- Electronic governor
- Sender WT
- Senders OP
- Hot components and radiator guards
- Mobile components guards

Alternator

- Self-excited and Self-regulated
- IP23 protection degree
- Insulation H class

Container version

- Soundproof insulation made of high density volcanic rockwool
- High mechanical resistance
- Low level of sound emissions
- Door with window to visualize control panel, alarms and measurements
- Hoisting points reinforced for lifting with cranes and lower points for transportation with forklifts
- Residential silencer steel made, with -35dB attenuation and tilting cap in the exhaust
- Fuel tank integrated in the chassis
- Anti-vibration shock absorbers
- Steel chassis
- Robust construction designed for continuous or emergency applications
- Stainless steel fittings
- Emergency stops
- Easy access to the power connection
- Reinforced chassis for heavy range
- Easy access for chassis cleaning
- Silent-block with anti-corrosion protection between the monoblock and the chassis
- Easy access to fill radiator through the roof
- Manual oil extraction pump
- Automatic lube oil replenishment system with a 300L tank

Container Electrical System

- Control panel and emergency stop button
- Power panel
- Battery charger (standard on automatic control panels)
- Pre-heating resistance (standard on automatic control panels) / water jacket heater
- Battery charge alternator with ground connection
- Starting battery/ies installed and connected to the engine (supports included)
- Ground connection electrical installation with connection ready for ground pike (not supplied)
- 4 poles circuit breaker (T6 models)





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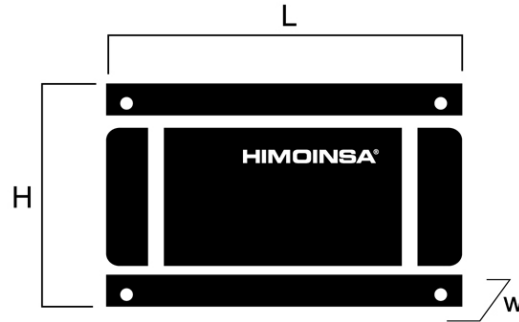
Container Electrical System

- The electrical system assures engine starting and maintains the batteries at their full charge; it is made by an electric starting motor 24Vdc for the diesel engine, this is supplied by a free maintenance battery system fitted on Genset skid. The batteries are charged by diesel engine charger. Genset it is fitted with a static battery charger single phase 230Vac.
- Himoinsa battery chargers have a continuous monitoring of both current and voltage to assure the best charging process and to avoid a deterioration of battery electrolytic.
- Electrical system is also completed with an earth point connection (earth spike not supplied).
- Battery switch.





Dimensions



20ft Weight and Dimensions			
(L) Length		mm	6.058
(H) Height		mm	2.591
(W) Width		mm	2.438
Shipping Volume seaworthy (standard supplier)		m3	38,27
(*) Wet weight		Kg	17.196
(*) Dry weight		Kg	15.631
Fuel tank capacity		L.	1000
Autonomy		Hours	5
Sound Level		db(A)@7m	TBC

(*) (with standard accessories)

STANDARD VERSION

Himoinsa reserve the right of modify any characteristic without prior notice.
Weights and dimensions based on products standar and dry / illustrations may include optional equipment.
Technical data here described correspond with the available information at the moment of printing.
Industrial design under patent.

Local Distributor