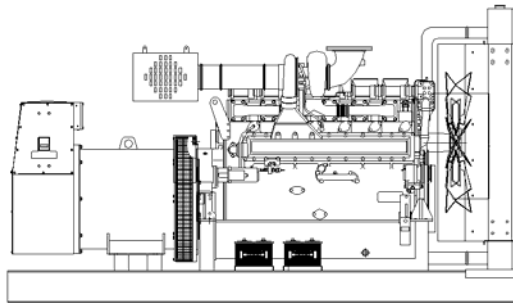




MAQUINARIA IGSA POWER GENERATION SYSTEMS



MODEL: GSMT10600M
DIESEL ENGINE: MITSUBISHI
MODEL: S6R-Y1PTA-4, TIER 1
CAPACITY: 600 kW; 1800 RPM

RATINGS RANGE

PRIME hp (kW)	STANDBY hp (kW)
816 (609)	898 (670)

All data represent net performance with Standard accessories such as air cleaner, inlet/exhaust manifolds, fuel oil system L.O. pump, etc. under the condition of 100kPa (14.5 psi) barometric pressure, 77°F (25°C) Ambient temperature and 30% relative humidity

STANDARD FEATURES

Complete system designed and built at ISO9001 certified facility

- Factory tested to design specifications at full load conditions.
- Fully engineered with a range of options and accessories.

1 IGSA Genset's are composed of 6 cylinders in line and four strokes diesel engine for industrial stationary applications. Those equipments are fully factory tested using a resistive load. (1) Hour ramp 100% load test.

2 The controls and accessories are selected to work together to achieve the maximum operational performance and security.

3 Exhaust gases silencer, and a section of flexible tube for connection purposes.

4 Engine **MITSUBISHI, S6R-Y1PTA-4 TIER 1**

5 Marathon Alternator.

6 Vertical Radiator.

7 Control MEC 310 (panel USC300).

8 Base of structural steel.

GENERAL FEATURES

- IGSA GENSET of, **600 kW to 480V, 440V, 416V, 380V, 220V, 208VAC**, 3 Phase, 4 Wire, 60 Hertz, is composed by an internal engine four strokes coupling with the alternator, controls and accessories totally assembled and tested in factory.
- The controls and accessories of the Genset are selected to provide the maximum in efficiency and Security.
- The generator set its components are tested factory-built, and production-tested.
- The genset engine is certified by the Environmental Protection Agency (EPA) to conform to Tier 1 nonroad emissions regulations tier1.
- Speed control Woodward ProAct



WE ARE THE BEST IN MANUFACTURING THE POWER GENERATION SYSTEMS AND ADDITION CONSTANTLY INNOVATION.

www.igsa.com.mx
All rights reserved.
Printed in MEXICO

ENGINE SPECIFICATION DATA MODEL S6R-Y1PTA-4 Weight 2300 Kg (5072 Lb)

General Data	
Model	S6R-Y1PTA-4
Cylinder Arrangement	In line
Number of Cylinders	6
Bore and Stroke--in.(mm)	6.69x7.09 (170x180)
Displacement--in. ³ (L)	1497 (24.51)
Compression Ratio	15.0:1
Engine Type	4 Cycle, Water Cooler
Aspiration	Turbo-Charged, After Cooler
Physical Data	
Length--in.(mm)	
Width--in.(mm)	
Height--in.(mm)	
Weight, dry--lb (kg)	5072 ((2300)
Weight, wet--lb (kg)	5380 (2440)
Performance Data	
Steady State Speed Stability Band any Constant Load Electric Governor-- %	±0.25 or better
Maximum Overspeed Stability Capacity-- rpm	2100
Moment of inertia of Rotating Components-- lbf X ft ² (kgf x m ²) (includes Std. Flywheel)	908.1 (38.26)
Cyclic Speed Variation with Flywheel at 1800rpm	1/164
Engine Mounting	
Maximum Bending Moment at Rear Face of Flywheel Housing--lbf X ft (kgf x m)	1447 (200)
Air System	
Maximum Air Intake Restriction (Includes piping)	
With Clean Filter Element-- in.H2O (mm.H2O)	15.7 (400)
With Dirty Filter Element-- in.H2O (mm.H2O)	25.0 (635)
Exhaust System	
Max. Allow. Back Press.--in.H2O (mm.H2O)	23.6 (600)

Lubrication System	
Oil Pressure at Idle--psi (kgf/cm ²)	29~43 (2~3)
at Rate Speed--psi (kgf/cm ²)	71~93 (5~6.5)
Maximum Oil Temperature--°F (°C)	230 (110)
Oil Capacity of Standard Pan High--Gal (Liter) Low--Gal (Liter)	21.1 (80) 13.2 (50)
Total System Capacity (Includes Oil Filter)--Gal (Liter)	26.4 (100)
Maximum Angle of Installation (Std. Pan) Front Down (Engine Only) Front Up	11.5° 10°
Side to Side	22.5°
Cooling System	
Coolant Capacity (Engine only)-- Gal (Liter)	13.2 (50)
Maximum External Friction Head at Engine Outlet--psi (kgf/cm ²)	5.0 (0.35)
Maximum Static Head of Coolant above Crankshaft Center-- m(ft)	32.8 (10)
Maximum Outlet Pressure of Engine Water Pump-- psi (kgf/cm ²)	37.1 (2.6)
Standard Thermostat (modulating) Range-- °F (°C)	160~185 (71~85)
Maximum Coolant Temperature at Engine Outlet--°F (°C)	208 (98)
Maximum Coolant Expansion Space-- % of System Capacity	10
Maximum Coolant Temperature at Intercooler Inlet, TK type--°F (°C)	
Maximum Air Restriction on Discharge Side of Radiator and Fan-- in.H2O (mm.H2O)	0.4 (10)
Fuel System	
Fuel Injection	Mitsubishi PS6 Type x 1
Fuel Consumption – ST-BY (PRIME)	
Load 75% gal/h	33.4 (30.6)
Load 100% gal/h	44.5 (40.3)
Starting System	
Battery Charging Alternator-- Ah-V	30 - 24
Starting Motor Capacity-- kW - V	7.5 - 24
Maximum Allowable Resistance of Cranking Circuit--m Ω	2.5
Recommended Minimum Battery Capacity	
At 5°C (41°F) and above-- Ah	200
Bellow 5°C (41°C) through--23°F (5°C)	500



WE ARE THE BEST IN MANUFACTURING THE POWER GENERATION SYSTEMS AND ADDITION CONSTANTLY INNOVATION.

MARATHON. ELECTRIC ALTERNATOR MODEL 572RSL4030
weight 1410 kg (3110Lb)

Kilowatt ratings at kW (kVA)	1800 RPM			60 Hertz			12 Leads standard 3 phase			
	3 Phase			0.8 Power Factor			Dripproof or Open Enclosure			
Voltage	Class B		Class F				Class H			
	80° C, 176°F (1) Continuous	90° C, 194°F (1) Lloyds	95° C, 203°F (1) ABS	105° C 221°F British †	105° C, 221°F (1) Standard	130° C, 266°F (1) Continuous	125° C 257°F British †	125° C, 257°F (1) Standard	150° C, 302°F (1) Continuous	150° C, 302°F (1) Standby
480/240	485 (606)	530 (663)	545 (681)	575 (719)	575 (719)	600 (750)	590 (738)	600 (750)	645 (806)	
460/230	495 (619)	530 (630)	505 (631)	570 (713)	570 (713)	610 (763)	595 (744)	605 (756)	650 (813)	
440/220	480 (600)	510 (638)	495 (619)	545 (681)	545 (681)	590 (738)	580 (725)	580 (725)	625 (781)	
416/208	460 (575)	490 (613)	470 (588)	525 (656)	525 (656)	565 (706)	555 (694)	555 (694)	600 (750)	
380/190	425 (531)	450 (563)	440 (550)	485 (606)	485 (606)	485 (606)	485 (606)	485 (606)	485 (606)	

(1) Rise by resistance method, Mil-Std-705, Method 680.1b.

† Rating per BS 5000.

Submittal Data: 480 Volts, 600 kw, 750 kVA, 0.8 P.F., 1800 RPM, 60 Hz, 3 Phase					
Mil-Std-705C			Mil-Std-705C		
Method	Description	Value	Method	Description	Value
301.1b	Insulation Resistance	> 1.5 Meg	505.3b	Overspeed	2250 RPM
302.1a	High Potential Test		507.1c	Phase Sequence CCW-ODE	ABC
	Main Stator	2000 Volts	508.1c	Voltage Balance L-L OR L-N	0.20%
	Main Rotor	1500 Volts	601.4a	L-L Harmonic Maximum - Total (Distortion Factor)	5.0 %
	Exciter Stator	1500 Volts	601.4a	L-L Harmonic Maximum - Single	3.0%
	Exciter Rotor	1500 Volts	601.1c	Deviation Factor	5.0%
	PMG Stator	1500 Volts	--	TIF (1960 Weightings)	<50
401.1a	Stator Resistance, Line to Line		--	THF (IEC, BS & NEMA Weightings)	<2%
	High Wye Connection	0.0089 Ohms	652.1a	Shaft Current	<0.1 ma
	Rotor Resistance	0.426 Ohms	--	Main Stator Capacitance to ground	0.03 mfd
	Exciter Stator	23 Ohms			
	Exciter Rotor	0.045 Ohms			
	PMG Stator	2.1 Ohms			
410.1a	No Load Exciter Field Amps at 240/480 Volts Line to Line	0.66 A DC			
420.1a	Short Circuit Ratio	0.528			
421.1a	Xd Synchronous Reactance	2.89 pu			
422.1a	X2 Negative Sequence	0.227 pu			
423.1a	X0 Zero Sequence Reactance	0.057 pu			
425.1a	X'd Transient Reactance	0.162 pu			
426.1a	X"d Subtransient Reactance	0.129 pu			
427.1a	T'd Transient Short Circuit				
	Time Constant	0.116 sec.			
428.1a	T"d Subtransient Short Circuit				
	Time Constant	0.01 sec.			
430.1a	T'do Transient Open Circuit				
	Time Constant	2 sec.			
432.1a	Ta Short Circuit Time				
	Constant of Armature Winding	0.02 sec.			

* (3) Excitation support system or PMG required to sustain short circuit currents.

* Voltage refers to wye (star) connection, unless otherwise specified.

RATINGS: All three-phase units are rated at 0.8 power factor. All single-phase units are rated at 1.0 power factor. Standby Ratings: Standby ratings apply to installations served by a reliable utility source. The standby rating is applicable to varying loads for the duration of a power outage. There is no overload capability for this rating. Ratings are in accordance with ISO-3046/1, BS5514, AS2789, and DIN 6271. Prime Power Ratings: Prime power ratings apply to installations where utility power is unavailable or unreliable. At varying load, the number of generator set operating hours is unlimited. A 10% overload capacity is available for a 12 hour period. Ratings are in accordance with ISO-8528/1, overload power in accordance with ISO-3046/1, BS 5514, AS 2789, and DIN 6271. For limited running time and base load ratings, consult the factory. The generator set manufacturer reserves the right to change the design or specifications without notice and without any obligation or liability whatsoever. GENERAL GUIDELINES FOR DERATION: Altitude: Derate 1.0% per 100 m (328 ft.) elevation above 1000 m (3279 ft.). Temperature: Derate 5.0% per 10°C (18°F) temperature above 40°C (104°F).



WE ARE THE BEST IN MANUFACTURING THE POWER GENERATION SYSTEMS AND ADDITION CONSTANTLY INNOVATION.

www.igsa.com.mx
 All rights reserved.
 Printed in MEXICO

CONTROLLER FOR GENSET: CONTROL MEC 310 PANEL USC300

The Generator Controller MEC 310 is a microprocessor-based control unit containing all necessary functions for protection and control of a power generator. Besides the control and protection of the diesel engine it contains a full 3-phase AC voltage and current measuring circuit. The unit is equipped with an LCD display presenting all values and alarms.



- USC 300C Unit Mount Control Panel, Black Nema 1 enclosure c/w rubber mounts
 - MEC 310 Microprocessor Based Engine Generator Controller
 - Graphic Display 128 X 64 pixels (STN) Super Twisted Nematic
 - Digital AC Metering:
 - 3-Phase Volts (Phase to Phase and Phase to Neutral),
 - 3-Phase Amps
 - Frequency
 - kW, kVAR, KVA, pF, kWhr
- AC Protective Relaying:
 - 27/59 Under/Over Voltage
 - 32 Reverse Power
 - 51 Time Overcurrent
 - 81 O/U Under/Over Frequency
 - Digital gauge display:
 - Oil Pressure (sender required by others)
 - Coolant Temperature (sender required by others)
 - Fuel Level (sender required by others)
 - Hourmeter
 - Tachometer
- 5 digital inputs for alarms / shutdowns
 - Dedicated Output Contacts - Engine Crank; Run (30 VDC / 6 Amps)
 - Three Programmable Output Contacts (30 VDC / 1 Amps)
 - Event Logging (30 events)
 - Pushbuttons:
 - Emergency Stop
 - Manual Start and Stop
 - Manual/Auto/Test
 - Lamp Test
 - Horn Silence
 - Indicating Lights:
 - Common Alarm
 - Generator Ready (Voltage and Frequency Normal)

FEATURES

- Electrical Rating:**
- Single or three phase, 600VAC maximum, 50/60HZ, 4 wire
 - 12 or 24Vdc (nominal) supply, negative ground.
 - Dedicated Output Contacts - Engine Crank; Run (30 VDC / 6 Amps)
 - Three Programmable Output Contacts (30 VDC / 1 Amps)
- Enclosure:**
- Black Nema 1 enclosure c/w rubber mounts
- Engine Senders:**
- Oil pressure (1/8" NPT), Temperature (1/4"NPT) (Supplied loose for engine mounting).
- Requirements:**
- Exceeds requirements of CSA 282 and NFPA 110 Level



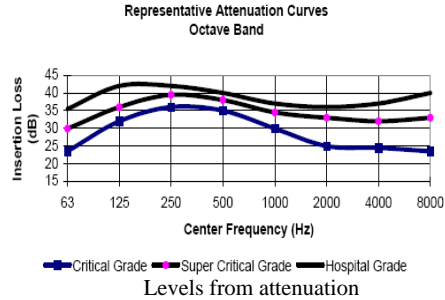
WE ARE THE BEST IN MANUFACTURING THE POWER GENERATION SYSTEMS AND ADDITION CONSTANTLY INNOVATION.

www.iqsa.com.mx
All rights reserved.
Printed in MEXICO

OPTIONAL SILENCER ACCORDING TO THE APPLICATION

Silencer with different levels from attenuation

- Critical Grade
- Super Critical Grade
- Hospital Grade



DOCUMENTATION AND OTHERS

- Manual of operation and maintenance
- Spare parts
- Maintenance
- Consulting

MISCELLANEOUS EQUIPMENT

- Batteries of 12 VDC with cables for battery connection with the engine.

GENSET OPTIONS

Control Panel

USC 300C Control Panel is standard on all units see page 4 of spec sheet for standard features.

Another Type _____

Cooling System

Radiator

- Radiator Duct Flange
 Antifreeze drain Extension

Fuel system

- Fuel Water Separator
 Day tank
 Auxiliary fuel pump

Diesel Fuel Tank

- 1000 L (264.1 gal)
 5000 L (1320.8 gal)
 15000 L (3962.5 gal)

Exhaust System

- Critical Grade
 Super Critical Grade
 Hospital Grade

Engine Electrical system

Battery

- Lead-Acid
 NiCad

- Battery Rack
 Battery Charger Automatic

Generator

- Breaker in the alternator
 PMG excitation & DVR 2000 Regulator

OPTIONAL ACCESSORIES AVAILABLE FOR THE EQUIPMENT

Vibration isolation

- Rigid Spring Mounting
 Resilient Mounting

Filters

- Air Filter for Medium Dust Environments
 Air Filter of Heavy Dust Environments

Drain

- Oil drain Extension

Enclosures

- Sound Attenuated
 Weather Proof
 Stainless steel cover
 Trailer Mounting
 Interior lights AC or DC

Heaters

- Jacket Water Heater
 Crankcase Oil Heater

Insulation Blankets

- Features:
(Temperature to 1260°C (2300°F), Non-Combustible, Highly Resistant to Vibration, Oil, Fuel, Grease, and Moisture Resistant Exterior, Personal Protection

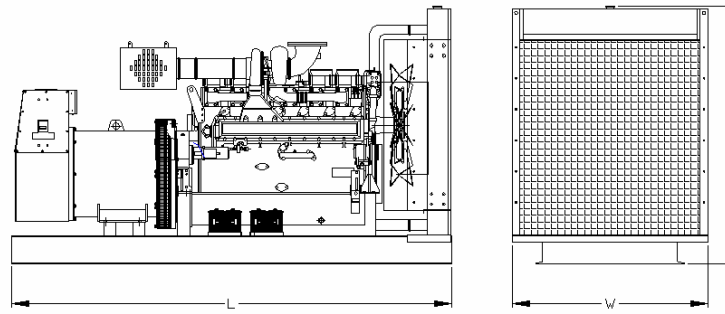
Notes



WE ARE THE BEST IN MANUFACTURING THE POWER GENERATION SYSTEMS AND ADDITION CONSTANTLY INNOVATION.

www.iqsa.com.mx
All rights reserved.
Printed in MEXICO

DIMENSIONS



LENGTH	WIDTH	HEIGHT
mm (in)	mm (in)	mm (in)
3600 (142)	1600(63)	2100(102)

NOTE: General configuration not to be used for installation. See general dimension drawing for detail.

SERVICES

- Development of the project.
- Development of engineering.
- Equipment's Installation
- Engineering for special applications.
- Synchronies with utility network or more Gensets.
- Attention and technical support

INSTALLATION OPTIONS OF THE GENSET

- On-Site
- Acoustic Enclosure
- ISO Container
- Trailer

