FDK ENERGY
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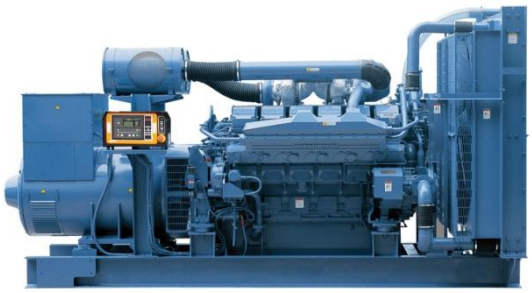
DATA SHEET

DIESEL GENERATOR 600KW
MODEL#FDK-M750/H1
50HZ/1500RPM
MITSUBISHI MODEL: S6R2-PTA-C



General Features:

- All qualified generator sets are subjected to a comprehensive performance test which includes 50% load, 70% load, 100% load, 110% load and to check, verify that all control systems, alarm and shut-down protection.
- Equipped with battery charger and 24V high performance maintenance-free lead-acid starting batteries and connecting cables.
- Stainless galvanized zinc plates with strong corrosion-proof.
- Vibration isolators between the engine/alternator and base frame.
- Equipped with industrial silencer and flexible exhaust hose.
- Designed to comply with ISO8528/GB2820.
- Powered by Mitsubishi engine and coupled with Stamford alternator.
- Water jacket preheater, oil heater and double air cleaner, etc. are available.

FDK Diesel Generator Set Data

Genset Model	FDK-M750/H1	Engine Make	Mitsubishi China
Prime Power	530KW/663KVA	Engine Model	S6R2-PTA-C
Standby Power	600KW/750KVA	Alternator model	Stamford HCI544F
Output Frequency / Rated speed	50Hz/1500rpm	Control System	DSE7320
Rated Voltage	230V/400V	Phase	Three

(1) **Prime power**: The rating is available for an unlimited of annual operating hours in variable load applications, in accordance with ISO8528-1.A 10% overload is available for a period of 1 hour within 12-hour period of operation, in accordance with ISO 3046-1.

(2) **Standby power**: The rating is applicable for supplying emergency power in variable load applications for up to 200 hours per year in accordance with ISO8528-1. Overload is not allowed.

(3) **Rated voltage**: available with customer requirement.

Engine Specifications (DETAILED in APPENDIX)

Engine Model	S6R2-PTA-C	Aspiration	Turbo charged
Engine Manufacturer	Mitsubishi China	Bore x Stroke (mm x mm)	170×220
		Displacement	29.96L
Cylinder quantity	6	Compression Ratio	14:1
Cylinder Arrangement	In-line	Prime power / Speed (KW/RPM)	575/1500
Cycle	Four stroke	Standby power/ Speed (KW/RPM)	635/1500

CE ISO9001:2008

Speed governor	Electronic	Fuel Consumption at 100% load	N.A.
Piston Speed	11m/s		
Maximum Regenerative Power	64kw	Starter motor	24V
Total Lubrication System Capacity (L)	100	Alternator	24V
Coolant Capacity Engine Only (L)	55	Maximum Overspeed Capacity	1750RPM

Alternator Specifications

Alternator model	HCI544F	Number of phase	3
Alternator manufacturer	STAMFORD	Rated voltage	400V (Available with custom requirements)
Exciter type	Single bearing, Brushless, Self-excited	Power factor	0.8
Rated output prime power	670 KVA	Voltage regulation NL-FL	≤±1%
Rated speed	1500 rmp	Insulation grade	H
Rated frequency	50Hz	Protection grade	IP23

Alternator option: Leroy Somer, MECC, Marathon, Engga, Faraday

Control System DSE7320 (DETAILED in INSTRUCTION)

DSE7320 is an advanced control module based on micro-processor, containing all necessary functions for protection of the genset and the breaker control. It can monitor the mains supply, breaker control and automatically start the engine when the mains are abnormal. Accurately measure various operational parameters and display all values and alarms information on the LCD. In addition, the control module can automatically shut down the engine and indicate the engine failure.

FEATURES

- Microprocessor control, with high stability and credibility.
- Monitoring and measuring operational parameters of the mains supply and genset.
- Indicating operation status, fault conditions, all parameters and alarms.
- Multiple protections; multiple parameters display, like pressure, temp. etc.
- Manual, automatic and remote work mode selectable.
- Real time clock for time and date display, overall runtime display, 250 log entries.
- Overall power output display.
- Integral speed/frequency detecting, telling status of start, rated operation, overspeed etc.
- Communication with PC via RS485 OR RS232 interface, using MODBUS protocol.

Soundproof Enclosure Specification

FDK silent generator is designed by professional acoustic engineers based on years of experience. Now we can make the noise of the generator less than 80-85dB(A) at 1m, or 70-75dB(A) at 7m, 60-65dB(A) at 15m.

FEATURES

- Multi-way air intake and exhaust guarantee the power performance of the generator.
- Large-scale impedance combined type silencer effectively reduce noise of the generator.
- Internal high performance rubber damper and flexible materials reduce vibration.
- Base mounted fuel tank supports the generator running for 8 hours.

Optional

Generator set	Alternator	Low environment Temp	ATS
☐ Open generator set	☐ Stamford	☐ Water heater	☐ CHINT
☐ Silent generator set	☐ Marathon	☐ Oil heater	☐ SCHNEIDER
☐ Trailer generator set	☐ Mecc Alte	☐ Battery heater	☐ ABB
☐ ABB MCCB circuit breaker	☐ Leroy Somer		
	☐ Farady		
	☐ Engga		
Fuel system	**Control system**	**Voltage**	**Synchronized system**
☐ 12hrs base tank	☐ AMF function	☐ 415/240V	☐ CHINT Cabinet
☐ 24hrs base tank	☐ ATS control cabinet	☐ 400/230V	☐ SCHNEIDER Cabinet
☐ Dual wall base fuel tank	☐ DSE7320	☐ 380/220V	☐ DSE8610 Module
☐ Outside fuel tank	☐ DSE7510	☐ 220/127V	☐ COMAQ Module
	☐ GU620A	☐ 200/115V	☐ DEIF Module

Dimension & Weight

Open

Overall Size: L×W×H (mm)	4000×1600×2200
Weight (kg)	4800

Soundproof Version

Overall Size: L×W×H (mm)	5800×2000×2550
Weight (kg)	7500

Sales Promises

- FDK provides a full line of brand new and high quality products. Each and every unit is strictly factory tested before shipment.
- Quality warranty is according to our standard conditions: 12 months from BL date or 1000 running hours, whichever comes first.
- Service and parts are available from FDK or distributors in your location.
- FDK guarantee use **BRAND NEW & GENUINE MACHINE.**

SPECIFICATION

OF

MITSUBISHI DIESEL ENGINE

MODEL : S6R2-PTA-C

FOR DIESEL GENERATOR SET

								APPROVED BY	DRAWN BY
				△					
				DATE		2013.07.18			

1.GENERAL

Object and use	:	Diesel generator
Color of painting	:	GB02(GSB05-1426-2001)
Applicable conditions		
Ambient temperature	:	5°C ~ 40°C
Altitude	:	1500m above sea level
Max,humidity	:	85%
Place of installation	:	In door

Shop test

Diesel engine running tests shall be carried out by the following items.

Starting test		
Load test	:	1/4, 2/4, 3/4 Load each
	:	4/4 Load
Governor test	:	Governor test should be done along with respective governor controller
Safety stop device test		

Standard

All items, unless otherwise specified, are in accordance with JIS, GB and manufacturer's standards.

2.PRINCIPAL PARTICULARS

Model	:	MITSUBISHI S6R2-PTA-C
Type	:	4cycle stroke, water cooled diesel engine
Combustion chamber	:	Direct injection type
Aspiration	:	Tarbocharged with after cooler
Number of cylinders	:	6-L
Bore × stroke	:	170mm × 220mm
Total displacement	:	29.96 L
Compression ratio	:	14.1 : 1
firing order	:	1 - 5 - 3 - 6 - 2 - 4
Direction of rotation	:	Counter clockwise as viewed from flywheel side
Engine dimensions	:	Length Apx. 1945.5mm
	:	width Apx. 1050.5mm
	:	Height Apx. 1578mm
Dry weight	:	Apx. 2900kg (without accessories)
Fuel oil	:	ASTM D975 No. 2 - D or BS 2869 class A or GB 252-0
Lubricating oil	:	API service CF class or CH-4 class

Output at ISO 8528 standard air conditions (25°C, 100kPa, 30% Humid)

Stand - by rating	:	635kW/1500min^{-1}
Prime rating	:	575kW/1500min^{-1}

3. STANDARD EQUIPMENTS

(1) Power line system

Flywheel	:	DWG.NO.38C96-21001
		SAE J620d 18in, except screw size
Flywheel housing	:	DWG.NO.38C96-21001
		SAE J617c NO.0, except screw size
Engine mounting	:	DWG.NO.38C96-14001
		4 points mounting, C = 160mm
Torsional vivration damper	:	Viscous type

(2) Air intake system

Air cleaner	:	DWG.NO.38C96-30181
		DWG.NO.38C96-30383 loose supply
		2 pcs
		Paper element type with rain cap
Turbocharger	:	MITSUBISHI TD Type
		Model : TD15
Air cooler	:	Jacket water cooled type
		plated element type
Air heater	:	Not supply

(3) Exhaust system

Exhaust manifold	:	Air cooled type without heat insulator
Muffler	:	Not supply
Flexible pipe	:	DWG.NO.S37-1080 loose supply
		JIS 200A, L = 230mm, Weight 38kg
Companion flange	:	Not supply
Breather	:	DWG.NO.38C96-43081
		Downside direction type
		For blow - off to outside of engine room

(4) Lubricating system

Oil pump	:	Gear pump type
Capacity of oil pump	:	270L/min (at Engine Speed 1500min^{-1})
Lub. oil pressure at main gallery	:	0.5 ~ 0.65 MPa
Quantity of oil (Approx.)	:	Oil pan full level : 84 L
		low level : 52 L
		Others (filter etc.) : 10 L
		Total : 94 L
Lub. oil filter (Full flow)	:	Paper element cartrige type × 2pcs
		filter mesh : 20 μ
		with by - pass alarm switch
Lub. oil filter (By - pass flow)	:	Paper element cartrige type × 1pc
		filter mesh : 2 μ
Lub. oil cooler	:	Water cooled corrugated fin type with by - pass valve

(5) Cooling system

Water pump	:	Belt drive centrifugal type
Capacity of water pump	:	820 L/min (at Engine Speed 1500min^{-1})
Thermostat	:	Wax pellet type × 2pcs
		Open at 71°C ~ 85°C
Fan	:	Pusher type steel fan 1010 diameter
		Fan speed ratio i = 0.806
Quantity of Coolant	:	Approx.55L (only Engine)

(6) Fuel system

Fuel inlet pipings	:	DWG.NO.38C96-62113
		For rubber hose joint (hose dia. ϕ 16mm)
Fuel return pipings	:	DWG.NO.38C96-61313
		For rubber hose Joint (hose dia. ϕ 16mm)

Fuel overflow of Inj. Pump and fuel leak - off of Nozzle have to return to fuel tank

Injection pump	:	Bosch type "PS6" without timer
Feed pump	:	Piston type with priming pump
Injection Nozzle	:	Hole type 0.325mm× 10 holes
Fuel filter	:	Paper element cartrige type × 2pcs
		Filter mesh : 5 μ

(7) Control system

Governor	:	DWG.NO.38C96-63016
		Electronic speed governor
		Speed droop ： 0 ~ 5% abjustable
Actuator	:	DWG.NO.S13-1761
		Supply voltage ： DC24V± 20%
		Current consumption
		At starting : 13A
		Normal operation : 0.5 ~ 2A
		Min. Supply voltage : DC16V50%ED
Controller	:	DWG.NO.S13-1042 loose supply
		Model : XS-400B-03 (04410-33100)
		Supply voltage ： DC24V± 20%
Potentiometer	:	PM10kΩ， For low idling speed setting
		Not supply
Potentiometer	:	PM10kΩ， For rated speed setting
		Not supply
Connector	:	DWG.NO.S13-1022 loose supply
		From actuator to controller
		5000mm length
Magnetic pick up	:	DWG.NO.S13-2011
		With connector
Cable	:	DWG.NO.S13-2020 loose supply
		From magnetic pick up to controller
		4300mm length

(8) Starting system

Starter switch	:	with key, with heat position
		Not supply
Starting motor	:	DC24V, 7.5KW
		Reduction type with safety relay
		with 2 poles connector (DWG. NO.S14-0320)
Safety relay	:	Not supply
		The following Starter Protection functions shall be provided by Customer.
		1) Function for engagement operation again when engagement of pinion gear fails.

Current of starter	:	Rush 700A Cranking 370A (Ambient temp : 5°C, Lub. oil : SAE NO. 30)
Alternator	:	DWG.NO.S10-0540 DC24V, 30A, with voltage regulator With 2 poles connector (DWG. NO.S10-0550)
Recommended battery capacity	:	DC24V, 250AH Not supply
Battery switch	:	Not supply

(9) Stopping system	:	DWG.NO.38C96-87502
Automatic stop		Automatically shut - down by stop solenoid and electronic governor power off simultaneously
Stop solenoid	:	DWG.NO.S13-0282 Energized to run type DC24V, 30.7A(pull), 0.58A(hold)
Manual stop	:	By stop lever

(10) Safety device		
Alarm swtitches	:	DWG.NO.38C96-90240
Alarm and trip		
Low oil press. switch	:	DWG.NO.S11-0796 (04442-45400) Diaphragm type : 0.15MPa switch on
High water temp. switch	:	DWG.NO.S11-0551 (04442-34500) Wax type : 98°C switch on
Alarm		
Oil filter alarm switch	:	DWG.NO.S11-1371 Piston type : 0.15MPa switch on
Oil filter alarm lamp	:	Not supply
Air filter alarm indicator	:	DWG.NO.S11-0920 loose supply Machanical type : 635mmH_2O switch on

(11) Instrument

Meter and sensor	:	DWG.NO.38C96-90151
Tachometer	:	Pulse type for engine speed
		With electrical hour meter
		Not supply
Magnetic pick up	:	DWG.NO.S13-2011
		For tachometer, pin-joint type
Cable	:	For magnetic pick up
		Not supply
Thermometer	:	Electrical type for jacket water and lub. oil temp.
		Not supply
Press. gage	:	Electrical type for lub. oil press.
		Not supply
		With 2 poles connector (DWG.NO.S14-0330)
Thermometer	:	For exhaust gas temp.
		Not supply

(12) Others

Belt cover	:	DWG.NO.38C96-25180
		For water pump and alternator
Tools (loose supply)	:	Not supply

4. ACCESSORIES (Loose supply parts)

NO.	PARTS NO.	PARTS NAME	Q' TY	DWG. NO.	
1	47220-39203	AIR CLEANER ASSY.	2	S35-0511	
2	47220-35200	CAP	2	S35-0650	
3	47220-12100	ELBOW, HOSE	2	S35-0701	38C96-30383
4	47220-39300	BAND	4	S35-0600	
5	05317-51601	CLAMP	4		
21	47220-34401	INDICATOR	2	S11-0920	
6	47920-00700	FLEXIBLE JOINT	1	S37-1080	
12	04410-33100	CONTROLLER	1	S13-1042	
14	04410-32902	CONNECTOR	1	S13-1022	38C96-63016
15	04410-43500	CABLE, PICK UP	1	S13-2020	
17	F8665-02100	CONNECTOR	1	S14-0320	for starter
18	04322-50001	RELAY, CHATTERING	1	S10-0052	
19	32B90-00300	CONNECTOR	1	S10-0550	for alternator
27	MH052231	CONNECTOR	1	S14-0330	

5. DRAWINGS

NO.	DWG. NO.	DWG. NAME	REV.
1	38C96-00281	ENGINE OUTLINE	
2	38C96-01018	JOINT DETAIL	
3	38C96-04061	WIRING DIAGRAM	
4	38C96-14001	MOUNTING DETAIL	
5	38C96-21001	FLYWHEEL & HOUSING DETAIL	
6	38C96-25180	BELT COVER	
7	38C96-30181	AIR INLET PIPING	
8	38C96-30383	AIR CLEANER	
9	38C96-43081	BREATHER	
10	38C96-61313	FUEL RETURN PIPING	
11	38C96-62113	FUEL INLET PIPING	
12	38C96-63016	GOVERNOR	
13	38C96-87502	STOP SYSTEM	
14	38C96-90142	METER & SENSOR	
15	38C96-90151	METER & SENSOR	
16	38C96-90240	ALARM SWITCH	
17	S10-0540	ALTERNATOR	
18	S10-0550	CONNECTOR	
19	S11-0551	THERMO SWITCH	
20	S11-0796	PRESSURE SWITCH	
21	S11-0920	INDICATOR	
22	S11-1371	FILTER ALARM SWITCH	
23	S13-0282	SOLENOID	
24	S13-1022	CONNECTOR	
25	S13-1042	CONTROLLER	
26	S13-1761	ACTUATOR	
27	S13-2011	MAGNETIC PICK UP	
28	S13-2020	PICK UP CABLE	
29	S14-0320	CONNECTOR	
30	S14-0330	CONNECTOR	

NO.	DWG. NO.	DWG. NAME	REV.
31	S35-0511	AIR CLEANER	
32	S35-0600	BAND	
33	S35-0650	CAP	
34	S35-0701	ELBOW	
35	S37-1080	FLEXIBLE PIPE	