

**IM-860 - MITSUBISHI - S12A2-PTA**

**1.500 R.P.M. | 50 Hz**

## TECHNICAL SPECIFICATIONS

Model:

**IM-860**

Stand-by automatic gen set.



Image for guidance purposes.

ENGINE	MAKE	MODEL
	MITSUBISHI	S12A2 - PTA
ALTERNATOR	MODEL	
	MECC-ALTE ECO 43-1SN/4	

(400 / 230 V)

CONTINUOUS POWER: (PRP "Prime Power" norma ISO 8528-1)	<b>780 kVA</b>
STAND-BY POWER: (LTP "Limited Time Power" norma ISO 8528-1)	<b>860 kVA</b>

### Amperes in the different voltages:

VOLTAGE	HZ	PHASE	COS Ø	PRP KVA/KW	LTP KVA/KW	AMPERAGE
415/240	50	3	0,8	781,0/624,8	860,7/688,5	1198,77
400/230	50	3	0,8	781,0/624,8	860,7/688,5	1243,72
380/220	50	3	0,8	781,0/624,8	860,7/688,5	1309,18
240/139	50	3	0,8	781,0/624,8	860,7/688,5	2072,87
230/133	50	3	0,8	781,0/624,8	860,7/688,5	2162,99
220/127	50	3	0,8	781,0/624,8	860,7/688,5	2261,31

**ELECTRO EXIM SRL**

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## ENGINE CHARACTERISTICS

MAKE	MODEL
MITSUBISHI	S12A2 - PTA

### GENERAL DATA

Power PRP (kWm)	657.00
Power LTP (kWm)	724.00
No. cylinders	12
Cylinder capacity (L)	33.93
Diameter per stroke (mm)	150 x 160
Compression ratio	14.50
Cooling system	LIQUID
Injection	DIRECT
Suction	TURBO-INTERC.
Series regulator	-
Fly wheel coupling	-

### Lubrication system

Oil capacity (L)	180.00
Oil consumption (%)	-
Min. alarm oil pressure (bar)	-

### Ventilation system

Air cooling flow (m3/h)	68400
Combustion air flow (m3/h)	3780.00
Max. back pressure for fan (mbar)	-

### Exhaust system

Exhaust gas flow (m3/h)	10020
Exhaust back pressure (mbar)	60
Temp. exhaust gases (°C)	-

### Electrical system

VDC (V)	24
Battery (Ah)	2 x 180
Engine start-up (kW)	2 x 6

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## ALTERNATOR CHARACTERISTICS

### MODEL

MECC-ALTE ECO 43-1SN/4 (400 / 230 V)

### GENERAL DATA

Power PRP (kVA)	800.00
Power LTP (kVA)	880.00
Efficiency Alt. 3/4 %	95.30
Efficiency Alt. 4/4 %	95.10
No. Poles	4
Voltage regulator	DER-1
No. wires	12
Insulation	H
Xd (%)	353.00
X'd (%)	19.20
X	9.90
Degree of protection	IP21

## GENERATOR SET CONSUMPTION

% POWER USED	LITRES/HOUR
50%	91.00
75%	131.00
100%	173.00

## DIMENSIONS, CAPACITIES, APPROXIMATE WEIGHT AND NOISE

LENGTH	DIMENSIONS (MM)	
	WIDTH	HEIGHT
6500	2220	2680
FUEL TANK (LITRES)		WEIGHT (KG)
1000.00		-
NOISE LEVEL (dB (A))		

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## **INMESOL GENERATOR SET**

### **GENERAL DESCRIPTION**

The "INMESOL" generator set is an electrical energy generating machine which is used in places where there **is no mains supply** or when there is a MAINS failure.

The mobile elements, distribution belt, fan, etc., and those parts which reach high temperatures during operation, exhaust manifold, etc, include their corresponding protections, in compliance with the requirements of the Machinery Directive **2006/42**.

### **REGULATIONS**

The machine holds the "CE" marking, and the corresponding Declaration of Conformity is issued with each of them, in which it specifies that the machine complies with **R.D 842/2002 Low Voltage Regulations and with the European Directives:**

- 2006/42 on Safety in Machinery.
- 2006/95/CE on Electrical Safety.
- 2004/108/CE on Electromagnetic Compatibility.
- 2005/88/CE on NOISE EMISSIONS by equipment for outdoor use (for SOUNDPROOF GENERATOR SETS).

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**HR HEAVY RANGE / SCOPE OF SUPPLY**



Engine/alternator monobloc directly connected and installed via silent blocks on a frame made from high tensile electro welded steel profiles that are treated with degreasing liquids and aplicated with a phosphate coat and epoxi paint. Outdoor and anticorrosive special treatment.	✓	✓
Canopy of steel sheet sound proofed with fireproof rockwool, and treated with degreasing liquids and aplicated with a phosphate coat and epoxi paint. Outdoor and anticorrosive special treatment.	•	✓
Engine with mechanical engine driven pusher fan.	✓	✓
Residencial silencer with -35 db(A) noise reduction with exhaust tube and protection cap.	•	✓
Residencial silencer with -15 db(A) noise reduction and exhoust outlet pipe.	✓	•
Integrated lifting hook for single point lifting with crane.	•	✓
Integrated lifting hooks to be carried and moved.	✓	•
Radiator water filling register cover	•	✓
Easy cleaning register and radiator replacement.	•	✓
Metal fuel tank.	✓	✓
Drain and cleaning lid on fuel tank.	✓	✓
3 Valves fuel tank outside connection kit.	✓	✓
Quick socket fuel tank.	✓	✓
Security protection in warm parts	✓	✓
Oil extraction system placed in sump	✓	✓
External emergency stop push button.	✓	✓
Starting battery with security bornes and battery switch off.	✓	✓
Ground alternator with battery charger.	✓	✓
Autoexcited and autoregulated alternator.	✓	✓
Control panel to read electric measures, power, oil level,... /	✓	✓
Electrical digital control panel manual/automatic.	✓	✓
Circuit breaker, IV poles (automatic version).	✓	✓
Ground terminal.	✓	✓
Kit sockets (optional)	✓	✓
Inside auxiliary light (optional).	•	✓
Standard electronic speed governor on engines.	✓	✓
No drip security bucket.	✓	✓

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## DSE 7320 AUTOMATIC CONTROL PANEL

### DSE 7320 AUTOMATIC CONTROL PANEL

PROTECTION, DISTRIBUTION AND AUTOMATIC CONTROL panel which starts the generator set when it detects a mains failure and stops it when the mains is restored with the control unit DSE 7320.



Image for guidance purposes.

It has the following:

- 1** EMERGENCY STOP PUSHBUTTON
- 2** PROTECTIONS:
  - Magnetothermal switch (preheating resist.) 2P (16 A)
  - Protection fuses for control module
- 3** BATTERY CHARGER

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**DSE 7320 AUTOMATIC CONTROL PANEL**

**4 DSE 7320 CONTROL and PROTECTION CENTRE.** It has a digital LCD screen, which provides easy reading of the information regarding the ENGINE, ALTERNATOR, MAINS and CHARGING.

**READINGS that can be made:**

**ENGINE:**

- Coolant temperature
- Oil pressure
- Turning speed (rpm)
- Fuel level
- Battery voltage
- Battery alternator voltage.
- Operating hours
- Number of start-ups

**ALTERNATOR AND CHARGE:**

- Voltages between phases and between phases and neutral.
- Intensities
- Frequency
- Active Power (kW)
- Reactive Power (kVAr)
- Apparent Power (kVA)
- Cos phi
- Active energy meter (kW-h)

**MAINS:**

- Frequency
- Phase rotation order
- Voltages between phases and neutral (L1-N, L2-N, L3-N).
- Voltages between phases and (L1-L2, L2-L3, L1-L3).
- Earth current

**CONTROL of the set:**

- STARTS and STOPS the set AUTOMATICALLY when mains failure is detected and when it is restored, respectively.
- It can also operate MANUALLY

**Protection of the engine and alternator, with the ALARMS activated:**

**ENGINE:**

- Low oil pressure
- High coolant temperature
- Low and High battery Voltage.
- Failure of the alternator to charge batteries
- Low fuel level

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## DSE 7320 AUTOMATIC CONTROL PANEL

### ALTERNATOR:

- Low and High Voltage
- Low and High Frequency
- Overload due to Intensity (A)
- Short-circuit
- Negative Phase Sequence.
- Power Overload (KW-kVA)
- Load control:
  - 1.Connection and disconnection of artificial loads.
  - 2.Disconnection of non-essential loads

### MAINS:

- Low and High Voltage
- Low and High Frequency

### OTHER CHARACTERISTICS:

- The real-time clock provides an exact record of events.
- Extensive number of configurable inputs and outputs.
- Configurable alarms and timers.
- USB connectivity
- Fully configurable via software and PC.
- Modbus RTU
- Possibility of SMS text messages
- Communications Ethernet, RS 232 and RS 485
- Programmer Clock with multiple maintenance events which can be configured for the optimal operation of the engine. Weekly and/ or monthly programming of up to 16 starts and stops per week.
- ALTERNATIVE CONFIGURATIONS, which open up the working possibilities

### 5 DISTRIBUTION:

- Direct output of the magnetothermal switch.

### 6 OPTIONAL:

- 4-Pole Switchboard installed next to the Automatic Panel
- 4-Pole Switchboard in metal cabinet independent from the Automatic Panel



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**DSE 7320 AUTOMATIC CONTROL PANEL**

The following table shows the different amperages of the magnetothermal switches and the switchboards according to the set's power - Three-phase generators (single phase by request):

	CONT. POW	MAGNETOTHERMAL PROTECTION IV POLES (A)	SWITCHBOARD IV POLES (A)
SET'S POWER	250 - 275 kVA	400	400
	300 - 430 kVA	630	630
	450 - 500 kVA	800	800
	570 - 650 kVA	1000	1250
	780 - 800 kVA	1250	1250
	915 - 1100 kVA	1600	1650
	1150 - 1300 kVA	2000	2000
	1400 - 1750 kVA	2500	2500
	1800 - 2100 kVA	3200	3200

